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Teachers College RECORD

April 1927

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THE NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

THE SECOND YEARBOOK

Curriculum Problems in Teaching Mathematics

Part I is devoted to CURRICULUM PROBLEMS IN THE TEACHING OF ARITHMETIC. The contributors to this section are Professors F. B. Knight, of the University of Iowa, and G. T. Buswell, of the University of Chicago, and Miss Jessie P. Haynes, of Richmond, Va.

Part II is given over to CURRICULUM PROBLEMS IN THE TEACHING OF JUNIOR HIGH SCHOOL MATHEMATICS. The contributors to this section are Professor Ralph Beatley, of Harvard University, Mr. Harry Barber, of the Charlestown High School, Boston, Mass., Mr. C. Louis Thiele, of Detroit, Mich., and Professors David Eugene Smith and W. D. Reeve, of Teachers College.

Part III is devoted to CURRICULUM PROBLEMS IN THE TEACHING OF SENIOR HIGH SCHOOL MATHEMATICS. The contributors are Miss Gertrude Allen, of the University High School, Oakland, Calif., Mr. Eugene R. Smith, of Beaver Country Day School, Chestnut Hill, Mass., and Professor David Eugene Smith, of Teachers College.

The book consists of 297 pages.

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April, 1927

THIRTY YEARS OF PRACTICAL ARTS IN TEACHERS COLLEGE

UNDER THE ADMINISTRATION OF DEAN JAMES E. RUSSELL, 1897-1927*

By MAURICE A. BIGELOW

Director of the School of Practical Arts, Teachers College

THE practical arts, after thirty years of development into the present organization in Teachers College, are represented in the School of Practical Arts by the following eight groups or divisions which are equivalent to departments: fine arts, household arts, industrial arts, music education, nursing education, health education, physical education, and practical science. Practical arts as now taught in these departments can be defined and distinguished from the liberal arts by two outstanding characteristics: The first of these is that the fundamental knowledge or subject matter of practical arts is selected from the sciences (natural, social, and aesthetic) and organized with reference to use or practice in everyday life. The second is that the application of the selected knowledge requires intellectual and physical skill or neuro-muscular technique. Of course, manual skill alone was "art" in the old and narrow sense of methods for performing certain useful actions; for example, the art of black-

* The writer has had the good fortune to have been an interested observer of the movements in practical arts in Teachers College during twenty-eight of the thirty years. This article is therefore a combination of reminiscences and personal impressions and of facts from documentary sources.

smithing. Unfortunately, the phrase "practical arts" is often misunderstood as if it were the plural of "art" in the narrow sense limited to manual skill.

Thus, practical arts in Teachers College have grown quite into line with the lexicographers' broader definition of the arts as "branches of learning," or as "something the knowledge of which is to be acquired." At the present stage of development, this definition fits the practical arts as well as it does the liberal arts, the only essential difference being in the two fundamental characteristics of practical arts stated above, namely, knowledge which is practical and technical ability or skill to put it into practice.

But practical arts in Teachers College did not begin with such definite aims and philosophy. In fact, it appears that the first aims in the limited practical work represented in the college of thirty years ago did not go far beyond the acquirement of manual skill in certain useful or practical actions. It has been a long road from cooking and sewing to household arts, and from shopwork and manual training to industrial arts. The mileposts along that road indicate a steady development in Teachers College from mere emphasis on skill to organized arts or "branches of learning," which in their application to practical life combine both intellectual and physical skill.

Space will allow only a sketch of the long story from the very elementary work in practical arts which Dean Russell found going in 1897 to the present School with eight highly developed departments dealing with the technical and practical application of many phases of science, and with more than fifteen hundred students pursuing programs of courses designed for graduate students. The Dean has often confessed that in his early administrative years he dreamed of a day-to-come when there would be graduate students in educational psychology, history of education, philosophy of education, and educational administration; but he would probably have consulted a specialist in mental disturbances if into his dreams had come a vision that the simple work he found in cooking, sewing, drawing, woodworking, physical culture, and music would before the close of his administration reach graduate rank in such courses as food research, nutrition on a biochemical basis, household engineering, clothing design and economics, psychology of music teaching, art design as applied science of aesthetics, industrial arts education, physical education

based on the sciences, and many others. All these, and many equally surprising transformations from simple handwork into real practical arts, have come true in the three decades under Dean Russell's guidance, and to record the development of these in Teachers College is the chief purpose of this article.

The part which Miss Grace Hoadley Dodge played in the founding of Teachers College has often been written, but perhaps her devoted interest in practical education is not so well known. In the years preceding the founding of Teachers College, Miss Dodge was interested in helping working girls solve many of their practical problems. The length and breadth of her interest is best shown in a book which Funk and Wagnalls published for her forty years ago (1887) under the title *A Bundle of Letters to Busy Girls on Practical Matters*. It was really a book of Miss Dodge's heart-to-heart talks put into print, because she found it physically impossible to deal personally with the numerous girls who were interested by her talks. The very practical nature of her talks is clearly revealed in the topics of some of the "letters," as follows: Health; Dress; Men Friends and Prospective Husbands; Housekeeping Suggestions; Home Life; Food and Marketing; Care of the Sick; and Emergencies.

This little book of practical talks was only one of many of Miss Dodge's activities which showed her extensive interest in practical education. She organized many clubs and other large groups for the purpose of promoting educational interest in the affairs of practical life; but the climax of these promotive activities was the New York Industrial Education Association (1884), which aimed to promote practical education. Apparently, this Association first planned to conduct directly under its auspices courses in manual arts which would supplement the teaching in other subjects which children received in school; but soon after the organization of the Association, Miss Dodge persuaded Dr. Nicholas Murray Butler, then tutor in philosophy at Columbia College, before Columbia University was incorporated, to become the first president of the Association (1886). Dr. Butler soon directed the plans of the Association toward the development of a college for training teachers. The result was the New York College for the Training of Teachers, organized in 1887 with Dr. Butler as the first president, chartered in 1889, and changed to Teachers College in 1892.

The charter of this college for teachers is interesting with reference to practical arts because it provided for "instruction in the history, philosophy and science of education, in psychology, in the science and art of teaching, and also in manual training and the methods of teaching the various subjects included under that head." The "various subjects" then included under the head of "manual training" were shopwork in wood and metal, drawing, domestic art, and domestic science.

Dr. Butler resigned as president in 1891, and during the administration of Dr. Walter Hervey from 1891 to 1897, there were developed courses described in the catalogues as "vocal music," "physical culture," "mechanic arts," "form study and drawing," and "domestic economy."

When Professor James Earl Russell became Dean of Teachers College of Columbia University in November, 1897, the practical courses were grouped in departments of "domestic science," "domestic art," "manual training," "art education," "music and voice training," and "physical training." Here were the forerunners of five of the eight departments of practical arts as now organized. Dean Russell found the College well equipped for the "various aspects" included under manual training in the charter. Macy Hall, which still carries on its north façade the name "Manual Arts Building," with studios for fine arts and mechanical drawing on two floors, and with shops for woodworking and metal-working on three other floors, had been built in 1896. Milbank Hall, then just opened, had good laboratories for cooking and sewing in the rooms now occupied by biology. The writer recalls that on his first visit to Teachers College in April, 1899, the most impressive parts of the Teachers College buildings then existing (Main, Macy, and Milbank) were the seven large and well equipped shops for manual training, the laboratories for domestic science and domestic art, and the laboratories for physical science, which were then unique in their equipment with reference to practical application of physics and chemistry. Surely, the passing visitor might have been excused for getting an impression that the backbone of Teachers College was manual training.

The next development in the direction of practical arts was the opening of Thompson Hall and the coming of Dr. Thomas D. Wood in 1904. These two events marked a transformation from

the "physical culture" and "physical training" in the early days of the College into "hygiene and physical education" on a sound scientific basis. From that year, physical education in Teachers College has belonged to the practical arts in the larger sense, because it has been a body of scientific knowledge with a highly developed technique for its application to human health.

The next step in the evolution of practical arts was made possible by the opening of Grace Dodge Hall in 1909. Then for the first time the College could adequately provide for the sciences which are now known as practical science, for the household application of fine arts, and for the technical work of domestic science and art, which for a dozen years had been slowly evolving from skill in cooking, sewing, and housewifery into true arts on the basis of knowledge capable of application.

It was logical that domestic science and domestic art should now disappear from the Teachers College map, and so we find in the catalogue of 1909 a department or school of household arts announced. Meanwhile, in the years between 1905 and 1910, a parallel development had been going on in manual training, in which manual skill was slowly taking its proper place as a minor aim, and not the sole aim. After some cataclysmic changes in these years, manual training became true industrial arts. For this development of a new point of view, which was first outlined by Dean Russell,[1] Teachers College is especially indebted to Professor Frederick G. Bonser, who came in 1909.

The transformation of domestic science and art into "household arts" and of manual training into "industrial arts" had become so significant by 1909-10 that a School of Household Arts and a School of Industrial Arts were organized under the direction of Dr. Frederick H. Sykes, then director of Technical Education, and later the first director of the School of Practical Arts. These two Schools existed largely in printed announcements for about two years. Such an organization of household arts and industrial arts independent of fine arts, physical education, music, and practical science was illogical, and there was much working in the dark and at cross purposes during those two years, until Dean Russell conceived the brilliant idea of establishing a School of Practical Arts under an independent Faculty

[1] See (1) Address on industrial training, Forty-third Convocation, University State of New York, 1905, (2) article, "The School and Industrial Life," *Educational Review*, 1909.

of Practical Arts, which should have charge of all subjects closely connected with technical education. This School, with full standing as a college in the Columbia University system, opened with its first freshman class in September, 1912, and its story will occupy some later paragraphs.

It is doubtful whether Dean Russell, or any one else, could have projected such a school on a college basis as early as 1905, for the reason that the larger conception of the field and philosophy of practical arts had not been reached, either in Teachers College or in the educational world outside. Somewhere between 1905 and 1910 a broader view of technical education came within the educational horizon, and by 1910 the time was ripe for a college of practical arts which would bring together under one faculty all technical subjects which fit the definitions of practical arts set forth in the opening paragraphs of this article. Fortunately, Dean Russell and President Butler recognized the splendid opportunity open to Teachers College and to Columbia University to give practical arts on the new and broader basis the same standing which had long been held by the liberal arts. The significant fact is that the Bachelor of Science degree, made available in 1912 for graduates of the School of Practical Arts, had from the beginning the same standing with reference to admission to graduate work for higher degrees in this University as had the Bachelor of Science degree which had previously been conferred on the recommendation of the faculties of the two undergraduate liberal arts colleges of Columbia University. Such recognition of practical arts as "branches of learning," which differed from the liberal arts chiefly in their emphasis on practice or application, had not previously been given in any of the prominent universities.

The foregoing sketch of practical arts in the years preceding 1910 would be incomplete without mention of the outstanding personalities who led the early development of the several practical departments which were merged into the School of Practical Arts: Mary Schenck Woolman (domestic art), Helen Kinne (domestic science), Charles R. Richards (manual training), Charles Hubert Farnsworth (music), Arthur Wesley Dow (fine arts), M. Adelaide Nutting (household administration, 1906-1910; nursing education, 1910-26), and John F. Woodhull (practical science). Thomas D. Wood (physical education) and Frederick G. Bonser (industrial arts) have been men-

tioned. Each of these made a very definite contribution to the development which culminated in the organization of the School of Practical Arts in 1912.

The School of Practical Arts was at first limited to a four-year non-professional curriculum for both men and women and leading to the Bachelor of Science degree. It aimed to combine culture and practical education, but even its academic and cultural courses, amounting to one-fourth of the curriculum, were related as far as possible to practical life. It was inevitable that such a curriculum under a college for teachers would attract many students who intended to prepare for teaching various phases of practical arts, and so the original rules provided that if any students desired to prepare for teaching, they should be registered under the Faculty of Education, which had full control concerning the training of teachers. This arrangement existed almost two years, when a superficial survey proved that at least ninety-five per cent of the freshmen and sophomores then registered in the School of Practical Arts were looking forward to preparation for teaching. Moreover, almost all of the students who entered with advanced standing for the junior and senior programs in practical arts were forced to register in the School of Education because they wanted teachers' diplomas; but most of the courses elected were under the Faculty of Practical Arts.

The discovery of this tendency toward preparation for teaching made it evident that a non-professional school of practical arts could not hope to succeed as a part of Teachers College, except as a junior college. The Dean at once started readjustments which within two years gave the Faculty of Practical Arts full control of all courses within the field of practical arts. From that time, the School of Practical Arts tended rapidly to become another kind of school of education—a school for training teachers and leaders in the field of practical arts. Of course, this tended to parallel the work of the School of Education in other fields.

It is probable that if the undergraduate School of Practical Arts had been quite independent of Teachers College, it could have succeeded as a non-professional school, with a limited introduction to education in the junior and senior years. In fact, the general plan of the original four-year curriculum in the School of Practical Arts has been very much copied by other institutions which are not con-

nected with colleges for teachers. Dr. Sykes, the first director of the School, resigned in the second year in order to organize, along lines similar to the first plans of the School of Practical Arts, the Connecticut College for Women, which as an undergraduate college was at once successful.

Events came rapidly in the School of Practical Arts in its early years, and before the graduation of the first four-year class in June, 1916, it was evident to the Dean and the Faculty that the ever-increasing proportion of juniors and seniors admitted with advanced standing on the basis of work completed in other colleges was tending to push the freshman-sophomore work to the background and toward the ultimate elimination of the first two years of the curriculum.

The Faculty found it desirable to divide the curriculum into a freshman-sophomore division, under a subcommittee on instruction, and a two-year professional curriculum for juniors and seniors, eighty per cent of whom had received their first college training in normal schools, technical schools, and other colleges. This emphasis upon professional work for teachers grew steadily from 1916 to 1923 when, on the recommendation of the Faculty of Practical Arts, the Council of the University and the Trustees of Teachers College authorized the omission of the curriculum for freshmen and sophomores. The result was that in June, 1926, the eleventh and last class which would have an opportunity for a four-year curriculum in practical arts in Teachers College were graduated with the Bachelor of Science degree.

In the two years (1923-1925) required for the elimination of the freshman-sophomore classes, there was such a decided increase in the number of graduate and other advanced students in practical arts that in 1925 the Trustees approved other and more fundamental changes in the admission requirements and in the nature of courses to be offered, which placed the School of Practical Arts on a graduate basis. In accord with the latest order from the Trustees, most of the courses under the Faculty of Practical Arts have been adapted primarily to students who have completed four years of college study; in other words, the courses are now on the graduate basis which has prevailed in the School of Education since 1914. However, mature students without the Bachelor of Science degree who have completed

two or three years of approved study in colleges, normal or technical schools, and who have had at least two years of satisfactory teaching experience, are admitted as undergraduates and permitted to elect such courses as they are prepared to pursue in classes with graduate students. Such students who do not hold standard Bachelors' degrees are considered undergraduates until they have completed courses satisfying the requirements for the Bachelor of Science degree.

Along with this radical change of courses and student body to the graduate basis and the complete abandonment of the original four-year curriculum, for which the School was organized in 1911-12, has come the decision to limit the work of the School to the field of a college for teachers and educational leaders. In other words, the School of Practical Arts no longer plans courses in the technical work of household arts, fine arts, and practical science for students who are not aiming at professional service in education. The Bachelor of Science degree is no longer offered without at least twelve points of general education. The only possibility of obtaining a degree with an entirely technical program without education courses is in programs for the degree of Master of Science; but it happens that all the present candidates for that degree are experienced teachers who are devoting a year to intensive technical and scientific study.

All the above means that at the beginning of the sixteenth year of its existence, the School of Practical Arts became a professional school of technical education on a graduate basis, a standard which was set a dozen years ago by the companion School of Education. Teachers College now finds itself consisting of two entirely parallel professional schools for teachers—the School of Education, which originally had full control of the training of teachers, and the School of Practical Arts, which was intended to offer an undergraduate curriculum and incidentally prepare some students for the School of Education. Unexpected evolution has resulted in the two schools and the two faculties becoming completely parallel in all respects.

This historical sketch of the development of the School of Practical Arts into a graduate school of technical education gives the answer to the familiar puzzling questions often asked by visitors, "Why is a School of Education in a Teachers College?" and "Why is there a School of Practical Arts, most of whose students are preparing for teaching?" Of course, the answers are not to be found in logic, but

in the historical growth of Teachers College between 1910 and 1925. Things have grown into their present situation in spite of the fact that they were planned otherwise. It is not surprising that many visitors, most alumni, numerous students, and some members of both faculties have been puzzled as to the relations between the two Schools. Probably only the members of the original Faculty of Practical Arts and some of the college officials remember that the School was not in the beginning permitted to train teachers, but that within its first three years it was forced into that "job" because the name "School of Practical Arts of Teachers College" attracted so many students who wanted to prepare to teach.

In the foregoing paragraphs there has been reference to the rapid growth in numbers of professional students in the two-year curriculum for the junior and senior years. At the same time there has been for the last dozen years a still more surprising increase in the number of graduate students in practical arts. It has been stated that originally the School of Practical Arts was strictly an undergraduate organization. The new University regulations developed in 1915 gave the Faculty of Practical Arts an opportunity to extend its influence into the graduate field, especially because it was given control of the work for the Master of Science degree, and, in coöperation with the Faculty of Education, of programs with major interest in practical arts education leading to the Master of Arts degree. Moreover, it has become possible, through coöperation with the Faculty of Education, for students interested in any phase of educational work in practical arts to become candidates for the degree of Doctor of Philosophy under the same conditions which apply to students in the School of Education. This extension of possibilities for graduate work in the field of practical arts has resulted in a rapid increase in the number of students: from 95 in 1915-16 to 151 in 1918-19 to 264 in 1921-22 to 489 in 1924-25 to 549 in 1925-26. The Registrar's figures for the present year are not yet available, but there are approximately fifteen hundred students under the Faculty of Practical Arts in the courses designed primarily for graduate students. About six hundred of these have entered with full graduate standing, and about nine hundred have entered with two or more years of college or normal school study and with two or more years of professional experience. In fact, the great majority of the present students in

practical arts who have not yet received a standard Bachelor of Science degree have had on the average more than four years of experience. The important fact is that in numerous classes they are proving their ability to compete successfully with the majority of graduate students.

Whatever may be the future organization, or even the name, of the School of Practical Arts, which in fifteen years has outgrown the work for which it was established, it is clear that the eight existing departments with common aims and interest in practical knowledge and application to daily life constitute a logical division of Teachers College. It seems therefore important that the departments of practical arts, which were developed side by side in the many years of experience with undergraduate courses, should continue to coöperate in graduate work devoted to the training of teachers and leaders in the various fields of practical arts for schools and colleges.

When a complete history of the first half century of Teachers College comes to be written, the story of practical arts will surely fill a prominent chapter. The College had its origin in elementary phases of practical arts education. These subjects have long held a conspicuous place in the life of the institution. The graduates have played an important part in developing practical arts in many leading schools and colleges. The present indications are that the usefulness of departments of practical arts is not at all tending to decrease; for the number of advanced students in practical arts in comparison with students of general education is far greater than might be expected when we consider the relatively small proportion of positions in practical arts in the United States. Probably in no other field of American education has Teachers College set more guideposts which point the way to leadership.

FOOD MARKETING IN THE CURRICULUM

By ARTHUR E. ALBRECHT, Ph.D.
Lecturer in Household Arts, Teachers College

IN ORDER that students of marketing may have a full appreciation of marketing facts, it is necessary to take them away from textbooks and out of the classroom, into various busy markets and into contact with those who are daily engaged in the work of distributing our food supplies.

Teachers College, being situated in New York City, is able to offer students many such unusual advantages. There are available not only trips through the different types of markets and talks with men in charge of the actual physical handling of foods, but lectures by research men and by the organizers and directors of big business enterprises. Many of these well-known men come to Teachers College from time to time to give of their wide experience. We have been particularly fortunate in having close coöperation with the State Department of Farms and Markets, through Dr. Arthur E. Albrecht, Director of the New York City Office of the Department, and a lecturer at Teachers College. The following paper was given by Dr. Albrecht before the National Home Economics Association at their meeting in Minneapolis.

Ruth L. Parrish
Instructor in Household Arts

A MORE efficient system of food distribution is conditioned very largely on an understanding of the complexities of that system by the buying public. Yet most consumers lack a clear understanding of just how food comes to their tables. For this reason, every well-rounded department of home economics includes in its curriculum courses on food marketing.

SOME NEWER ASPECTS OF FOOD MARKETING

The subject of food marketing resolves itself into two aspects: first, the selection of food; and second, the relation of the purchaser to the whole marketing system. The first aspect is physical, the second economic. The selection of food requires that the purchaser know how to select fruits, vegetables, and meats that satisfy her requirements. How to distinguish poor from good grapefruit, whether to buy chuck or loin cuts,—these and similar matters should

be covered in a course on food selection. These problems are largely a matter of technic. Such a course to be really valuable must be taught only in part in the classroom. Visits should be made to hotel supply houses, to poultry and meat dealers, to commission merchants and jobbers, and to retailers. Bulletins from the federal and state departments of agriculture will be found helpful. Donham's *Marketing and Housework Manual* and the latter part of Monroe and Stratton's *Food Buying and Our Markets* will be found valuable aids.

Teachers will find that while most of the food articles in magazines are devoted to cooking, occasional articles refer to food selection and the economics of marketing. The *Journal of Home Economics,* the *Good Housekeeping Magazine, McCalls,* and the *American Food Journal* are among the magazines that are increasingly devoting more space to the newer aspects of food.

The second aspect of marketing, the economic, has hardly been considered by most colleges. But, in the Department of Foods and Cookery, Teachers College, New York City, two courses on the economics of marketing have been given each semester for about five years. The courses are designed to give the student an understanding of the economic forces that lie beneath the marketing process, acquaint him with the different types of middlemen and their functions, examine and criticize existing processes, and suggest remedies.

One course is intended primarily for undergraduates and the other for graduate students. The lectures in both courses come at the same time but periodic conferences are held with the graduate students, each of whom must write a term paper on some economic aspect of marketing. It has been found best to set the class meetings for three hours on Saturday mornings, so that whenever necessary time may be devoted to field trips. These courses were started by Professor May B. Van Arsdale and Miss Day Monroe and are now carried forward by Miss Ruth Parrish. The writer, as director of the New York City Office of the State Department of Farms and Markets has coöperated with the University by giving lectures, advising students, offering suggestions for lectures and speakers, and in gaining access to offices and records not ordinarily available. From the first, students have had the markets of the city as their laboratory.

THE ECONOMICS OF MARKETING

The opening lecture in the marketing course given at Teachers College is entitled "The Meaning and Background of Marketing." It accounts for the recent interest in marketing problems, and gives a brief sketch of American marketing from the time of the colonial community to the present century when 95 per cent of our foods is handled by middlemen. In this presentation it is demonstrated that marketing is an evolved and an evolving process and that more light and less heat is needed for an intelligent consideration of the marketing problem by the consuming public.

The economic functions of middlemen are then discussed. The subject is made concrete by discussing the services performed by middlemen in the marketing of eggs. This process is described in detail in Bulletin 172, *What the Consumer Should Know About Eggs,* pages 29 to 41, "The Marketing Process," issued for free distribution by the New York State Department of Farms and Markets, Albany, New York.

Since the housewife is closer to the retailer than to the other middlemen a lecture is devoted to him. The growth of the chain store system of food retailing, the factors in the success of this type of business, and its relation to the independent retailer are discussed in the next lecture. Here students are asked, "Are prices lower at Chain Stores?" Their answers come at a subsequent time as they are based upon the result of an assignment which is required of each.

The prime influences in the growth of pushcart markets, their economic advantages, and their disadvantages and inconveniences form the subject of another lecture which precedes a trip to a large New York City pushcart market.

The roadside market as a new outlet for farm products is mentioned and students are urged to weigh its advantages as a result of their own purchasing experiences.

The origin, history, and aims of consumers' coöperation are discussed each term in one of the branches of a successful consumers' coöperative organization which operates four cafeterias, one food shop, and five circulating libraries. After a discussion of the weaknesses and possibilities of this movement, the manager of the cafeteria talks to the class about buying, management, and personnel problems.

The nature of advertising, its relation to branded goods, and its effectiveness are discussed briefly from the viewpoint of the consumer.

The economic function of cold storage is little understood by consumers. For this reason a lecture is given to the function of cold storage, the means of refrigeration, the extent of the industry, commodities refrigerated, effect of cold storage upon quality and prices. The prejudice against cold storage commodities is also accounted for and a summary given of the restrictions imposed upon cold storage food and warehouses by state laws.

The relation of the marketing system to the railroads is discussed in another lecture. The items that enter into railroad charges are pointed out. The importance of the development of the refrigerator car is stressed because this type of car has not only revolutionized the live stock and dressed meat industries, but the transportation of highly perishable fruits and vegetables from Southern and Western producing sections to Northern consuming centers has been made possible.

Each year consumers are cheated out of many millions of dollars because of fraudulent containers which give purchasers short measure containers for full-sized. Moreover, the numerous varieties of containers increase the cost of manufacturing, make it difficult to load freight cars properly, and slow up sales. These conditions are brought out and illustrated by an exhibit of market baskets, hampers, and round baskets, of varying sizes, commonly used for fruit and vegetables. The students are told how to be of definite service in remedying this deplorable situation.

The principle of standardization has largely been accepted by manufacturers as essential to improved marketing but a start in that direction is only now being made by agriculture. Why standardization benefits consumers, how standards are set, and how they are maintained are among the important topics in a lecture on the standardization of farm products.

The subject of coöperative marketing by farmers is treated in considerable detail because of its importance, its newness, and its relation to the consuming public. The important features of farmers' successful coöperatives are contrasted with the limitations of this new marketing movement which is perhaps the outstanding feature in the agricultural development of this century. Finally the con-

sumer is asked to think over the attitude that she should have toward these associations. She is also asked to ascertain whether or not consumers' coöperative associations can deal advantageously with coöperative marketing associations.

A number of the lectures are illustrated with slides. Teachers can obtain pictures for the use of slides from various sources: editors of agricultural magazines, state marketing bureaus, coöperative marketing associations, and from business concerns. On occasion one or two motion pictures have been used. Slides and motion pictures are especially valuable whenever the scene or activity shown cannot be visited on one of the marketing trips.

FIELD TRIPS

Students at Teachers College, New York City, have the advantage of being but a few miles from the largest market in the world. Every opportunity is taken to obtain information at first hand. One of the most interesting trips is that to a hotel supply house which sells fancy fruits and vegetables. Here is seen a tomato ripening room, a cold storage room, the sorting and grading of produce, and shipping. We also see commodities that are little known. Among them are Japanese crones, Jerusalem artichokes, and Chinese cabbage.

At a poultry distributing plant we see fancy poultry that comes from as far as South America and England, and from as close as Long Island. A twenty-pound turkey, ready for shipment to the city's best hotel, impresses us. On this trip the manager tells us how to select poultry and illustrates his remarks by a demonstration.

On another trip, we visit the headquarters of two coöperative egg marketing associations and an egg breaking establishment. The manager of one of the associations tells us how his eggs come from the far-off Pacific Coast and how they are sold at auction each afternoon. The manager of the other coöperative association represents nearby producers. He shows us how the "candle" will reveal the interior quality of eggs. The egg breaking establishment holds considerable interest. We find that eggs which are cracked or broken in shipment to the market are not thrown away but are laid aside by dealers and sold to egg breakers, who break out the contents of the eggs into large tin pails. These are put into cold storage and frozen hard to be sold to bakers, ice cream manufacturers, and others.

A visit to a farmers' wholesale market is followed by an inspection of a busy pushcart market. Here we find a wide variety of foods, anything from fruits and vegetables to clams, oysters, and snails.

A visit to one of the city's largest cold storage plants shows the magnitude of that industry and how foods are stored in sanitary surroundings.

The climax to these trips comes once a year when an all-night trip is made. We start at midnight and continue our tour until seven or eight o'clock next morning. The piers at which food is received are visited and a walk is taken through the very busy fruit and vegetable markets. The arrival of milk trains and the subsequent pasteurization of milk are observed. The country's largest farmers' wholesale market is visited and finally the Fulton fish market. To reach the various stops on time, we travel in a bus which is hired for the occasion.

THE LITERATURE OF MARKETING

Even until recently, there have been few textbooks on the marketing of agricultural products. The first standard marketing text appeared in 1916 by L. D. H. Weld, *The Marketing of Farm Products*. At that time Weld said, "The subject of marketing deserves the attention it is now receiving, and the frequent criticism that our state agricultural colleges have devoted relatively too much energy to teaching farmers how to raise more crops, and not enough to teaching how to market them, is largely justified." As a matter of fact Dr. Weld's statement still holds true to a considerable extent.

In the same year, *Marketing Perishable Farm Products* by Arthur B. Adams was issued as a doctoral dissertation at Columbia University. Subsequent to these two books, we find about two textbooks published each year. An examination of these books shows that they were written primarily for the farmer or for the distributor in order that selling costs might be reduced.

High living costs throughout the country also caused the Bureau of Labor Statistics and other governmental agencies to enlist the services of the best experts in the country to gather and to disseminate information to help the consumer purchase and use economic goods effectively. The Federal Trade Commission in 1919 con-

ducted an investigation into "The Wholesale Marketing of Foods" because of the high price of foods. A most comprehensive inquiry was undertaken by the Joint Commission of Agricultural Inquiry of the United States Congress in 1921. Of primary interest to teachers and consumers is the fourth part of the commission's report entitled, "Marketing and Distribution." In addition to these governmental reports, bulletins of the federal and various state departments of agriculture, as well as those published by colleges of agriculture, contain much information that can be made serviceable to the consumer. But in the main these publications are not suitable for classroom purposes because of their length or highly technical nature.

The textbooks on marketing and the publications of the various governmental agencies have been of service, indeed, to those writers who needed this fundamental marketing information for interpretation to consumers.

In my opinion, the recent publication of textbooks on food buying and marketing from the consumers' point of view is a most encouraging sign. In 1925 there was published *The Education of the Consumer* by Henry Harap. This book contains much practical advice on the purchase and use of every household article from the point of view of economy, durability, health, comfort, and beauty. It contains suggestions pertaining to selection, purchase, storage, care, and repair. It is a manual for the consumer, a reference book for the home.

The most useful book and also the most recent is *Food Buying and Our Markets* by Day Monroe and Lenore Monroe Stratton. This book was written to give the housewife a better understanding of the marketing process that she might develop an intelligent attitude toward marketing problems and to give her specific information on food buying. The book contains much data hitherto unpublished on costs, waste, and retail buying. It is written especially from the consumer's point of view.

THE HIGH SCHOOL PUPIL

While many of the lectures and the problems worked out by graduate students may seem fairly simple for college work, the subject of marketing is so new that a body of subject matter must be

developed. After the high schools have taken over the material as it is developed in the pioneer college courses, the colleges will be free to go ahead with more advanced research. Indeed, a number of the lectures given in Teachers College and some of the literature on marketing can be adapted to classes in the high schools. On the other hand, some of the subjects require maturer minds and a background of general economics. For example, while it would be practical to point out the advantages and disadvantages of the pushcart markets in high school, it would be impractical in most cases to teach in detail the reasons behind retail price margins. While some secondary classes might understand how cold storage stabilizes prices, all such classes could comprehend why certain foods must be placed in cold storage. Each school must decide for itself how much to include in a course on food marketing. The main purposes of such a course should be to acquaint pupils with some of the means by which food reaches our tables. How is it possible for the milkman to deliver a bottle of milk at our doorstep each morning? What is behind the breakfast table? Pupils should learn how to become more intelligent buyers of food so that they may make their small contribution to the solution of the vexing food marketing problem. A combined lesson in marketing and civics can be used to point out how local state and federal agencies assist the farmer and the consumer.

A LAST WORD

Just as the ultimate solution of our political ills is an informed body politic, so, too, the solution of our food marketing problem depends on a clearer understanding of the marketing system by the consumer. While pecuniary profits are the immediate aim of the business man, we must not overlook the fact that in the final analysis the purpose of all economic activity is satisfaction of human desires and wants. The understanding of how these desires and wants influence the marketing system will give the consumer much power for constructive reform. How will your pupils use their new understanding?

A COMPARATIVE STUDY OF JELLIES AND JAMS MADE WITH AND WITHOUT AN EXTRACTED PECTIN*

By VICTORIA CARLSSON
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FOR a number of years the use of commercial extracted pectins has been increasing in the classroom and in the home. This has made possible the extension of jelly making to fruits which do not contain a sufficient quantity of pectin to insure a jelly-like consistency. The following report is based on experimental work to compare the methods ordinarily used by the teachers and housewives with the methods advocated by the manufacturers of commercial products. The procedure commonly used by instructors and housewives is called "without an extracted pectin," and the procedure advocated by manufacturers is called "with an extracted pectin."

In this experiment the following fruits were made into jams and jellies:

	"With an Extracted Pectin"	"Without an Extracted Pectin"
Strawberry	jelly jam	jam
Raspberry	jelly jam	jelly jam
Cherry (sour)	jelly jam	jelly jam
Cherry (sweet)	jelly jam	jelly jam
Currant	jelly	jelly
Blackberry	jelly jam	jelly jam

* This problem was outlined by Miss Dorothy E. Shank and the writer, who took over this piece of work when Miss Shank resigned from Teachers College. The writer wishes to acknowledge the assistance of Mrs. Sarah Alling, as well as the coöperation of Miss Ina Padgett and her class in investigation cookery.

	"With an Extracted Pectin"	"Without an Extracted Pectin"
Peach	jelly jam	jam
Grape	jelly	jelly
Crab Apple	jelly	jelly
Orange	marmalade	marmalade

All of these fruits were bought in their seasonal order and in large quantities so that several trials of jellies and jams could be made from the same lot at the same time. The extracted pectin used in these experiments was a liquid pectin.

As the "with an extracted pectin" recipes call for fully ripe fruit which gives the maximum flavor and color, such fruits were used for all the experiments, and in the case of the peaches a few experiments on fruits which were not fully mature were also carried out. With the ripe raspberries and cherries "without an extracted pectin" a sirupy consistency was obtained instead of a jelly, and with several other fruits the results would have been far better had some less mature fruit been mixed with the very ripe fruit. Since strawberries lack pectin and peaches lack the proper proportion of pectin and acid, no attempt was made to prepare jellies from these fruits without an extracted pectin.

Six to eight weeks after they were made the jellies and jams were judged for texture, flavor, appearance, and keeping qualities as follows:

Texture (25 per cent if perfect)
  Tenderness, consistency, power to quiver, holding angles when cut.
Flavor (25 per cent if perfect)
  Naturalness, sweetness, strength.
Appearance (25 per cent if perfect)
  Transparency, color, shape, glistening surface.
Keeping qualities (25 per cent if perfect).

Judging was done by some of the instructors in Foods and Cookery, Teachers College, and by students in advanced cookery courses. The score for each trial was the average of scores given by ten judges, but in this report the score used is an average of average scores on a minimum of three to six trials.

As the weight of fruit varies and as all of the glasses were not of the same size, it was necessary to decide on the weight to be used as a standard per glass for each series. This was done by filling a six-ounce glass to just below the rim, and the weight of such a glass of jam or of jelly was considered a standard for the whole series. Other constants were:

Weight of one bottle of extracted pectin, 235.4 gr.
Volume of one bottle of extracted pectin, 227.5 c.c.
Cost of extracted pectin, $0.35 per bottle.
Weight of sugar, 200 gr. (approximately one cup).
Cost of sugar, $0.07 per lb. (453.6 gr.).

Wherever the crushing of fruit was necessary a wooden potato masher was used. Timing was done by means of a stop-watch.

In Tables I and II are given detailed data on jellies made by the two methods. These tables show that several tests were made with the exact proportions that the extracted pectin recipes call for, but also a greater number of tests were made with one half the recipe. The scores indicate that when fruit juice from the same source was used fully as good results were secured with a large recipe as with a smaller one.

Since fruit varies from season to season and in different parts of the country at the same time, it is very difficult to make a recipe that will give an infallibly good jelly; yet in many instances the recipes containing the extracted pectin give a jelly of too firm consistency, and when the jelly is allowed to stand this firmness is increased.

With the extracted pectin the following jellies were of very bright colors and transparent: strawberry, raspberry, cherry (both sweet and sour), currant, and peach. In only one case was it found that the extracted pectin tended to fade or lessen the color of the jelly, and this occurred in the case of crab apple. The jellies made without an extracted pectin were slightly darker in color and in some cases less transparent; this was due to the longer boiling necessary to get a jelly-like consistency.

It was found that with the extracted pectin there was a tendency to lessen the natural flavor of the fruit, particularly when too much pectin seemed to have been used. There was also a noticeable liquefaction of strawberry and raspberry jelly on standing, and with currants this tendency seemed greatly increased.

TABLE I

Detailed Study of Jelly Made With an Extracted Pectin

Fruit	Juice c. c.	Sugar Gms.	Extracted Pectin Gms.	Time to Come to a Boil	Time to Come to Boil after Certo	Sugar Gms. per Glass	Sugar % per Glass	Cost per Glass $	Total Yield in Gms.	Number of Glasses	Standard Weight per Glass	Score
Strawberry	948	1588	234.4	9′ 54″	....	119.9	66.7	0.112	2379.0	12.1	197.9	85.6
"	320	529	78.5	3′ 15″	....	131.2	66.3	0.108	798.0	4.0	197.9	85.2
"	320	353	78.5	4′ 50″	....	131.1	66.3	0.157	533.0	2.7	197.9	64.6
Raspberry	948	1600	234.4	7′ 45″	2′ 45″	126.5	63.5	0.0964	2518.7	12.6	199.1	93.0
"	474	800	117.2	4′ 34″	2′	124.2	62.4	0.0963	1423.0	6.5	199.1	88.1
"	311	525	87.9	5′	50″	124.0	63.3	0.099	830.2	4.2	199.1	86.6
Cherry (sour) ..	711	1300	234.4	7′ 5″	50″	114.9	60.6	0.086	2145.7	11.3	189.7	95.1
" " ..	355	650	117.2	4′ 60″	1′ 12″	114.2	60.2	0.085	1081.4	5.6	189.7	95.8
Cherry (sweet) .	711	1300	234.4	7′	45″	120.5	61.0	0.116	2130.2	10.8	197.4	86.2
Currant	1066	1500	117.2	3′ 55″	2′ 15″	126.0	63.6	0.076	2357.0	11.9	198.0	79.3
"	533	750	58.6	4′ 50″	52″	125.3	63.5	0.076	1160.5	6.0	198.0	79.6
Blackberry	948	1600	234.4	7′ 45″	1′ 40″	130.4	65.4	0.078	2449.4	12.3	199.5	89.5
"	474	800	117.2	5′	1′	124.2	62.3	0.075	1286.0	6.5	199.5	89.0
Peach	711	1300	234.4	4′ 24″	3′ 47″	115.3	60.1	0.076	2151.0	11.3	191.9	93.5
"	356	650	117.2	4′ 50″	3′	120.1	62.0	0.080	1031.7	5.4	191.9	94.2
Grape	948	1600	234.4	7′ 50″	1′ 35″	120.4	60.4	0.067	2651.1	13.3	199.3	91.1
"	474	800	117.2	6′ 30″	1′	119.2	60.8	0.067	1316.3	6.5	199.3	90.9
Crabapple	1067	1500	117.2	10′	30″	120.9	62.4	0.072	2402.4	12.4	193.8	86.7
"	533	750	58.8	6′	30″	111.4	57.1	0.079	1304.8	6.7	193.8	84.6

TABLE II

Detailed Study of Jelly Made Without an Extracted Pectin

Fruit	Juice c. c.	Sugar Gms.	Time to Come to a Boil	Time to Come to a Boil after Sugar	Boiling	Sugar Gms. per Glass	Sugar % per Glass	Cost per Glass $	Total Yield in Gms.	Number of Glasses	Standard Weight per Glass	Score
Raspberry	711	600	6′ 10″	2′ 30″	32′ 30″	139.9	70.3	0.129	854.2	4.3	199.1	32.3
"	500	420	3′ 30″	2′	22′	145.9	73.3	0.138	568.3	2.8	199.1	34.2
Cherry (sour)...	640	375	3′	2′ 30″	23′	114.7	60.5	0.135	621.8	3.2	189.7	54.2
Currant 1 : 1 ..	711	600	5′ 10″	52″	16′	113.0	57.2	0.081	1032.8	5.3	198.0	90.1
" 1 : ¾ .	711	450	5′	1′	13′ 25″	110.5	55.8	0.099	773.0	4.0	198.0	87.6
Blackberry 1 : 1	711	600	4′ 50″	2′ 40″	25′	137.9	69.1	0.085	870.7	4.4	199.5	90.3
" 1 : ¾	948	600	5′ 30″	3′ 50″	19′ 50″	144.9	72.7	0.112	827.9	4.2	199.5	86.0
Grape 1 : 1	948	800	5′ 50″	2′ 50″	9′ 10″	122.7	61.5	0.064	1302.5	6.5	199.3	93.3
" 1 : ¾ ...	815	525	5′ 40″	1′ 50″	12′ .5″	109.4	54.6	0.069	962.9	4.8	199.3	86.7
Crabapple 1 : 1	1000	840	6′ 30″	3′	11′ 30″	125.8	64.8	0.087	1296.9	6.4	193.8	88.0
" 1 : 1	592	500	4′	3′	12′ 15″	132.6	68.4	0.096	732.1	3.9	193.8	85.2
" 1 : ¾	1422	900	11′ 3″	3′ 50″	14′ 25″	109.8	56.7	0.096	1589.4	8.2	193.8	87.0

In the preparation of crab apple jelly by both methods one extraction gave a jelly of too firm consistency. It would doubtless have been better to have made at least three extractions and to have pooled all fruit juice before any jelly was made. It was found to be quite a time saver to cut the apples very fine; then boil them for ten minutes, mash thoroughly, and allow them to simmer five minutes. By putting them through a very coarse enameled sieve, the pulp could be returned to the kettle quickly and the next extraction started at once. The fruit juice was drained through a closely woven cotton flannel bag. The crab apple jelly was judged severely for lack of flavor, but this would be true of any crab apple jelly no matter what the method used, and was not due to the added pectin.

The "without extracted pectin" jellies made of currant, blackberry, grape, and crab apple were prepared with equal parts, by volume, of fruit juice and sugar as well as with one part of fruit juice to three-fourths of sugar. The most desirable jellies, according to the judges, seemed to be those in which equal parts of fruit juice and sugar were used.

The jelly tests used in the above experiments were both the sheet and the temperature tests. The temperature at which a jelly is finished varies not only with the different kinds of fruit but also with the amount of sugar added to the fruit juice. The temperatures of the jellies and jams varied from 217°F to 228°F. The sheet test was obtained by taking up a small amount of juice in a spoon, gently moving it in the air for a few seconds, and allowing it to drop from the side of the spoon. When the drops adhered and slid off in a sheet, leaving the edge clean, the jelly was finished.

The jellies made with an extracted pectin were all boiled exactly one half minute after the pectin was added. They all showed, for that reason, a fairly constant range of per cent of sugar per glass, the variation being 6.6 per cent, that is from 60.1 per cent to 66.7 per cent,—except in the case of crab apple jelly, where only one half of the recipe was used, which gave 57.1 per cent of sugar per glass. (See Table I, page 787.) On the other hand, in jellies made without an extracted pectin, where the length of time for boiling varied so greatly, the per cent of sugar per glass also varied, the range being as much as 18.7 per cent, that is from 54.6 per cent to 73.3 per cent. (See Table II, page 787.)

Jellies made with an extracted pectin cost less per glass than jellies made without an extracted pectin. (See cost column in Tables I and II.)

Raspberry jelly costs $0.0358 less per glass.
Cherry (sour) jelly costs $0.049 less per glass.
Currant jelly costs $0.014 less per glass.
Blackberry jelly costs $0.022 less per glass.
Crab apple jelly costs $0.018 less per glass.

A definite obstacle was met with in judging jams made with an extracted pectin and without an extracted pectin. The judges were not accustomed to seeing a jam that held the shape of the container like the jams made with an extracted pectin, and the question arose: "What is a standard for jams?" The food standard of the United States Department of Agriculture is as follows:

Jam is the sound product made with clean, sound, properly matured and prepared fresh fruit and sugar (sucrose) with or without spices or vinegar, by boiling to a pulpy or semi-solid consistency, and conforms in name to the fruit used, and in its preparation not less than 45 pounds of fruit are used to 55 pounds of sugar. (From Bailey, *Food Products, Their Source, Chemistry and Use,* Second Edition, page 218.)

Cruess gives the following standard for jam:

Jams are made by cooking and crushing whole fruit, adding sugar, and boiling for a short time. They are usually heavily spiced and are not cooked for any great length of time. The fruit is not broken up very finely. Apricots and berries and other fruits of high flavor and soft texture are suitable. If a large amount of sugar is used, *i.e.,* enough so that the jam will contain over 65 per cent sugar after it is cooked, it will keep well without sterilization. It is usually necessary, however, either to pack the jam boiling hot into containers and seal or to sterilize in the containers because the amount of sugar ordinarily used is not sufficient to preserve the product indefinitely. (From Cruess, *Home and Farm Food Preservation,* page 86.)

Another author gives the following:

Marmalades, jams, and conserves, when well made, always show a jelly-like appearance. [Later she states:] Whole small fruits are used in making jams, but the fruit does not remain whole in the preparation of jam. The sirup is bright and the mixture is alike throughout when the product is finished. Practically the same methods are followed in making jams of all berries. The ripe broken ones give a fine color and flavor, but one half of the quantity of the berries

selected for making jam should be slightly under-ripe. This is necessary to give the jelly-like consistency to the finished product. (From Ola Powell, *Successful Canning and Preserving*; Lippincott.)

From the data collected and the differences in opinion as to what constitutes a standard jam, it is evident that at present there is no definite standard for jam as there is for jelly. The judging was therefore very difficult and probably in many cases not so accurate as might be desired. The jams were made from the same lot of fruit as the jellies and on the same day whenever possible. When very ripe fruit was again used, we were unable to get a jelly test with cherry jam, and in some cases cooked the jam too long; but, as a whole, the jams without an extracted pectin scored higher than those with an extracted pectin.

In all of the experiments with the jams made with an extracted pectin, like those with the jelly, the exact proportion that the extracted pectin recipes called for was used, and a great many tests with less than full recipe were also made. The scores indicate that where the full recipe was used the most satisfactory product was produced.

The most satisfactory peach jam with an extracted pectin was obtained by fusing fully-ripe peaches which could be thoroughly crushed. The result was a jam of amber color, tinged with red, in which the fruit was evenly distributed and very pleasing in appearance. When the jams were made with less mature fruit, the fruit could not be crushed well and floated on top, and consequently, one minute boiling was not sufficient for the heat to penetrate fully. For this reason the keeping qualities of the jam were greatly reduced.

Jam made of sweet cherries with an extracted pectin gave a typical bright colored jelly in which were evenly suspended the cherries of much darker color. The judges felt that it lacked flavor and was much too sweet. This jam made without an extracted pectin was most undesirable.

The time for boiling jams with an extracted pectin varied with the different fruits. After the fruit and sugar mixture had boiled, it was removed from the fire and pectin was added; then the stirring was continued for five minutes.

In Tables III and IV are given data for jams made by the two methods. As the length of time for boiling varies more for the ex-

TABLE III

Detailed Study of Jams Made With an Extracted Pectin

Fruit	Fruit Gms.	Sugar Gms.	Extracted Pectin Gms.	Time to Come to a Boil	Boiling	Sugar Gms. per Glass	Sugar % per Glass	Cost per Glass $	Total Yield in Gms.	Number of Glasses	Standard Weight per Glass	Score
Strawberry	907	1361	117.2	3′ 10″	5′	132.8	66.8	0.097	2039.0	10.8	189.2	69.3
"	363	544	46.8	3′	4′	132.7	69.9	0.101	777.5	4.1	189.2	69.2
Raspberry	907	1300	117.2	6′ 20″	1′	118.2	59.8	0.076	2172 3	11.0	197.5	86.4
"	454	650	58.6	4′ 50″	1′	117.8	59.6	0.078	1090.1	5.5	197.5	80.8
Cherry (sour) ..	907	1474	234.4	4′	3′	147.8	73.5	0.089	2084.4	10.0	210.0	78.5
" " ..	454	731	117.2	2′ 20″	3′	133.9	66.7	0.081	1112.9	5.5	210.0	72.7
Cherry (sweet) .	907	1500	234.4	1′ 3″	3′	135.6	66.8	0.099	2244.6	11.1	202.3	73.6
Blackberry	907	1400	117.2	5′ 30″	2′	124.4	63.6	0.055	2202.3	11.3	195.6	91.0
"	454	700	58.8	4′ 30″	2′	122.2	62.5	0.054	1122.1	5.8	195.6	86.8
Peach	907	1500	234.4	9′	1′	111.9	57.4	0.064	2625.3	13.4	194.9	70.7
"	454	750	117.2	4′	1′	119.7	61.7	0.068	1209.0	6.3	194.9	75.9

TABLE IV

Detailed Study of Jams Made Without an Extracted Pectin

Fruit	Fruit Gms.	Sugar Gms.	Time to Come to a Boil	Time to Come to a Boil after Sugar Added	Boiling	Sugar Gms. per Glass	Sugar % per Glass	Cost per Glass $	Total Yield in Gms.	Number of Glasses	Standard Weight per Glass	Score
Strawberry	367	565	4′ 10″		5′ 30″	136.7	72.3	0.085	784	4.2	189.2	92.3
Raspberry	454	700	1′ 30″		17′ 50″	141.6	71.7	0.069	977	4.9	197.5	85.4
Cherry (sour) ..	907	800	3′	2′ 30″	17′	116.6	58.2	0.064	1378	6.8	201.0	82.2
" " ..	454	400	2′ 30″	2′	16′	134.9	66.7	0.073	604	3.0	201.0	77.6
Cherry (sweet) .	907	800	3′ 30″	3′ 30″	23′	122.0	60.3	0.095	1323	6.6	202.3	60.3
Blackberry	472	700	2′	2′ 30″	13′	159.5	81.4	0.052	861	4.4	195.6	69.6
Peach	720	1000	7′ 30″		17′	132.9	68.1	0.052	1454	7.5	194.9	81.1
"	486	700	4′ 45″		8′	136.5	70.0	0.051	1003	5.2	194.9	70.2

TABLE V

Detailed Study of Marmalades—With an Extracted Pectin and Without an Extracted Pectin

	Total Weight Oranges = O Lemons = L Gms.	Discarded White Skins Gms.	Sugar Gms.	Extracted Pectin Gms.	Time to Come to a Boil	Boiling	Sugar Gms. per Glass	Sugar % per Glass	Cost per Glass $	Total Yield in Gms.	Number of Glasses	Score
Oranges and Lemons	O = 1047 L = 81.5	143	1200	117.2	5′ 50″	5′	115.4	59.8	0.061	2023	10.5	79.9
"	O = 1052 L = 120	72	800	....	4′ 55″	12′ 45″	106.1	55.0	0.053	1457	7.6	90.7

Standard weight per glass—193 grams.

tracted pectin jams than for the jellies, so also does the percentage of sugar vary over a greater range,—16.1 per cent (from 57.4 per cent to 73.5 per cent.) (See Table III, page 791.) The boiling time without an extracted pectin varies even to a greater extent than with an extracted pectin; so also does the percentage of sugar per glass,—23.2 per cent (from 58.2 per cent to 81.4 per cent.) (See Table IV, page 791.)

Jams made with an extracted pectin cost more per glass than jams made without an extracted pectin:

Strawberry costs $0.014 more per glass.
Raspberry costs $0.008 more per glass.
Cherry (sour) costs $0.017 more per glass.
Blackberry costs $0.003 more per glass.
Peach, 18 min. cooking, costs $0.012 more per glass.
Peach, 8 min. cooking, costs $0.017 more per glass.

Table V gives data for orange marmalade made by the two methods. The judges preferred the marmalades made without an extracted pectin as to consistency, flavor, and appearance. There seems to be no advantage from the use of an extracted pectin in the making of marmalade. The white skins of oranges contain all the pectin necessary to make a satisfactory marmalade. To remove the white skins and destroy them only to use an additional pectin is unnecessary, although often recommended. Why denature and then renature?

ADVANTAGES OF AN EXTRACTED PECTIN IN JELLY MAKING AND JAM MAKING

With certain fruits, such as strawberries and peaches, which lack pectin or a proper proportion of pectin and acid, it is impossible to make a satisfactory jelly.

It is important to consider how well these fruits will combine with an extracted pectin. Apple pectin in general combines with most fruits, but, if used in too generous amounts, particularly with delicately flavored fruits, is apt to impart its own flavor. This same difficulty is encountered with orange pectin, which is likely to give a marmalade flavor to other fruit juices. Grapefruit pectin imparts no flavor to jellies and can be used with the most delicately flavored fruits. An extracted liquid pectin is a boon to a busy housewife who

has no time to spend in preparing her own pectin. It permits her to make jelly and jam from any available fruit.

The use of an extracted pectin greatly shortens the time required to make a jelly and jam. When very ripe fruits are used, as in the present experiment with raspberries and cherries, additional pectin is necessary to secure a good jelly. Without an extracted pectin the fruit juice and sugar were boiled twenty to thirty minutes and resulted in an unsatisfactory jelly of only a sirupy consistency. With an extracted pectin the boiling time was one-half minute; this gave a bright colored transparent jelly. Reducing the time of boiling lessens evaporation, and the addition of an extracted pectin therefore increases the yield of the jelly and reduces the cost per glass.

DISADVANTAGES OF AN EXTRACTED PECTIN IN JELLY MAKING AND JAM MAKING

Often jellies made with an extracted liquid pectin tend to liquefy when allowed to stand for a short time. This was particularly noticeable with currant jelly and to a lesser degree with strawberry and raspberry jelly. The jams made with the extracted liquid pectin were too firm, and the amount of pectin advised is often sufficient to impair the natural flavor of the fruit. Jams made with the extracted liquid pectin cost more per glass than jams made without this extracted pectin.

No advantage is secured in making marmalade with an extracted pectin as the white orange peel contains all the pectin that is necessary to make a good marmalade.

When such jellies as strawberry, raspberry, currant, cherry, and blackberry were made with an extracted pectin the paraffin came loose from the edge of the glasses. The paraffin on similar jellies made without an extracted pectin on the same day, from the same sources, and by the same method adhered firmly. It is also interesting to note that when the above jellies with an extracted pectin were reparaffined the paraffin again became very loose in a short time. Is this defect due to extracted pectin?

This report suggests the need for further investigation along the following lines:

1. The study of a better proportion of extracted pectin to various fruits for household recipes.

2. The study of a better method of paraffining for liquid pectin jellies and jams.

3. The study of the amount of corn sugar that may be used to substitute for cane or beet sugar in jellies and jams. This is especially timely because of the present bill (s481) presented to the House of Representatives at its last session and which after much discussion is being held over until the next Congress.

Table VI, of interest to housekeepers as well as to teachers, shows the definite yields in jellies and jams of a definite weight of fruit.

TABLE VI

YIELDS IN JELLIES AND JAMS FROM DEFINITE WEIGHT OF FRUITS

Fruit	One Quart Edible Portion In Gms.	Fruit Juice c. c.	Number of Glasses			
			Jelly		Jams	
			With Extracted Pectin	Without Extracted Pectin	With Extracted Pectin	Without Extracted Pectin
Strawberry	475	444	5.6	...	5.5	5.35
Raspberry	584	456	5.1	2.56	7.3	6.6
Cherry (sour)	406	318	5.1	1.63	4.8	2.8
Cherry (sweet)	452	280	4.3	...	5.5	2.8
Currant (red)	548	357	3.7	(1 : 1) 2.7 (1 : ¾) 2.2	...	...
Blackberry	711	531	7.0	(1 : 1) 3.3 (1 :¾) 2.3	8.8	6.6
Peach	363 *	234	3.6	5.6	3.5 **	3.3 ***
Grapes	441 *	286	3.9	(1 : 1) 2.0 (1 : ¾) 1.7	...	...
Crabapple	430 *	328 only one extraction made	3.9	(1 : 1) 2.2 (1 : ¾) 1.8	...	...

* One pound edible portion (in gms.). ** 8 minutes' cooking. *** 18 minutes' cooking.

THE PLACE OF EXPERIMENTATION AND RESEARCH IN IMPROVING THE NURSING CARE OF THE PATIENT*

By MARY M. MARVIN

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IN 1854, in a town which was the richest center of industrial activity of Northern France, a new *Faculté des Sciences* was built for the education of young men. The school was unique in that it provided laboratory experimentation for the first time for students preparing for industrial careers. The newly appointed Professor and Dean of the Faculty, filled with joy over this new opportunity of useful service to industrial people, was Louis Pasteur.

In his opening address four months later, he eloquently defended theory and experimentation in teaching as follows: "Without theory, practice is but routine born of habit. Theory alone can bring forth and develop the spirit of invention. It is to *you,* especially, that it will belong not to share the opinion of those narrow minds who disdain everything in science which has not an immediate application. You know Franklin's charming saying. He was witnessing the first demonstration of a purely scientific discovery and people around him were saying: 'But what is the use of it?' Franklin answered them, 'What is the use of a new born child?' Yes, gentlemen, what is the use of a new born child, and yet, perhaps at that tender age, germs already existed in you of the talents which distinguish you now! In your baby boys, fragile things as they are, there are incipient magistrates, scientists, heroes as valiant as those who are covering themselves with glory under the walls of Sebastopol. And thus, gentlemen, a theoretical discovery has but the merits of its existence, it awakens hope and that is all. But, let it be cultivated, let it grow, and you will see what it will become."

This plea for theory and research was made seventy-three years ago. The pursuit of it resulted in the development of a new biologi-

* An address given at the Nursing Education Section of the Teachers College Alumni Association Meeting, held February 12, 1927.

cal science which brought about a revolution not only in medical thought but in the whole method of discovering and applying medical knowledge. Research and experimentation are universally recognized instruments or methods for finding out new facts and principles and for applying known facts and principles to the problems of everyday life. People have always experimented and a few especially enterprising and curious ones have spent their lives in searching for new truth. But it is only recently that we have begun to appreciate the immense practical value of organized and directed research by competent, trained people.

There are six phases of experimentation which would help us in developing practical nursing along safer, sounder lines: first, an exhaustive study of nursing procedures from the standpoint of the biological and physical sciences; second, an analysis of nursing procedures on the basis of elimination of waste in materials, cost, energy, etc.; third, a comparative study of all equipment and materials used in the care of the sick; fourth, experimentation to find better methods of teaching the subject; fifth, tests for vocational aptitudes given before the students enter the school; and sixth, tests of nursing performance to determine the skill attained at any stage of teaching.

It is just possible that graduate nurses who have been connected with one or two hospitals may not feel the need for analyzing practical nursing methods so keenly as those who are familiar with the technique in many organizations. At Teachers College, where students have been coming from many parts of the world for over twenty years, the instructors of practical nursing have been impressed with the variety of methods of doing the same procedures and the lack of understanding of the principles involved.

We are all familiar with the ever-shrinking disinfectant solution in most thermometer glasses in our wards. How many of us would be willing to take our turn in a ward with thirty patients, as patient number *eleven,* and have our mouth temperature taken with one of those ten ward thermometers! Blood agar plates inoculated from swabs of supposedly *clean* thermometers set up in a certain hospital showed pure culture of streptococcus on three thermometers and mixed pneumococcus and streptococcus from two. This work was done a few years ago by the heads of the departments of hygiene and medicine at the University of California in a series of experi-

ments which were written up for *The Modern Hospital* in 1920. As a result these scientists worked out a safe and practical technique for use in one hospital. Every hospital which does not provide individual thermometers should work out a good, safe technique for its own use. Temperatures of patients are taken from one to six times daily. It is one of the commonest procedures and the questionable technique followed slavishly in many hospitals is criticized most by the nurses themselves. What are the most important facts to be known about thermometer technique? The efficacy of the disinfectant, the percentage strength of the solution, the time it takes to act, and its availability are essential. A series of experiments were once attempted to determine how far down the mercury should be shaken. Should the thermometer be completely submerged? What precautions should the nurse take in regard to her hands? To sum up, the points would include the cheapest, simplest equipment for the tray, the cleanest, safest method for the patient, the tray most convenient to carry, and the one safest from breakage. It would entail some experimental work to have this procedure worked out, but no instructor should be satisfied with the method she is handing down to her students, unless it has been approved by someone qualified to judge the tests.

There is the matter of the hypodermic. Each school is eager to use the safest, simplest, quickest method of preparing a hypodermic. There are a dozen different methods now is use. The sterilization of the barrel, the needle, the solution to be injected, the patient's skin, the attachment of the needle to the barrel after boiling, and the simplest, cheapest, total equipment for the tray, are points to be considered.

There are many facts yet to be learned about scrubbing the hands. In the first place, we ought to have more definite ideas about when to scrub and when to wash. How long should the hands be scrubbed, by what method, with what kind of soap, of what percentage strength? We should discover the best type of brush, one firm and non-irritating, cheap, proper size, with bristles small enough to get under the nails, and one which will stand soaking. The brush needs complete submersion in a certain kind of disinfectant, of definite strength, for a regular period of time. The nail stick should be used at certain intervals, and other precautions may be necessary. The hands may or may

not need soaking or rinsing for a certain length of time in a disinfectant solution after scrubbing. Some definite principles on hand scrubbing and washing could be worked out under the direction of a bacteriologist so that nursing instructors could establish a local technique through their own hospital laboratories.

The preparation and care of the surgical dressing carriage in a large, busy, surgical ward presents all sorts of unsolved problems. In the first place the large containers need to be a certain size so they may be accommodated on the carriage. The materials they are made of must be selected with reference to frequent, easy, and safe sterilization. They must be provided with proper covers which come down over or fit under the sides of the receptacles to protect the contents. The most appropriate, cheapest, and safest containers for boric acid, mercurocrome, Dakin's solution, saline, vaseline, dusting powders, and other drugs on the carriage should be produced. What is the safest, most convenient method of keeping adhesive, gutta percha, and iodoform gauze sterile? What provision could be made for the immediate disposal of soiled instruments, dressings, and basins during a dressing when time is at a minimum and nurses at a premium? What is the best way of daily or weekly sterilizing all the articles on the carriage,—steam, boiling, or the autoclave? There are problems in connection with assisting the physician with dressing. On what occasions does the surgeon need sterile gown and gloves, and at what times should sterile towels be provided? Each nurse is likely to hang on tenaciously to methods handed down to her. It is time we had scientifically tested procedures to guard our technique and facilitate our work.

There are countless other procedures which need study; such, for example, as the comparative effects of croup tents and intermittent bedside inhalations, the length of time for giving each, and the most advantageous position for the patient when the treatments are given. What kinds of counter-irritant nursing treatments are best for the chest? Hot, wet, woolen, linen, gauze and poultices are used in some hospitals; whereas, cold, wet, woolen, linen or gauze are used in others. Concerning the pack given for the entire body, some physicians order warm, wet sheets covered with dry blankets, while others, to produce the same effect, order cold, wet sheets covered with dry blankets. For other purposes, dry material is ordered next to

the patient, covered with a *moist* blanket, or wet material next the skin, covered with a *dry* blanket. Some advocate seven blankets, all wool, while others call for six, of which five are wool and one is cotton. Some insist that five are sufficient. Who knows but three might do as well provided the right kinds of materials are used? The comparative effects of the cotton sheet and blankets, and woolen fabrics in regard to size, quality of materials, and number needed to produce the same therapeutic effect, should be investigated. Other nursing procedures which need testing in regard to technique are nutritive enemas, the disinfection of various articles and the whole subject of lifting and transporting patients. Many procedures need to be standardized, such as bed making, ether beds, simple outdoor beds, cradle beds, and ordinary beds. Still other procedures such as the proctoclysis, hot wet compresses, and wound dressings are depending on the ingenious inventor who will devise appropriate and adequate equipment for their administration. Is it too much to hope that some day every nursing procedure will be scientifically tested and the results measured so far as it is possible to measure them?

The procedures suggested are only a few of hundreds which might be enumerated. Let us turn now to the total care of the patient. Who knows what the very best entire nursing care is for the post-operative exopthalmic goitre patient? Excellent care is often given by very good nurses; but if the methods used in various surgical centers were compared, it would be safe to say that they would vary greatly and that some would be more effective than others. Is one kind of nursing care of a post-operative draining gall bladder case as good as another? Developments after herniotomies suggest that the oft used knee roll may be a menace! Are there not certain superior methods of nursing colostomy cases? With the increase in brain surgery, a new kind of nursing technique is demanded. With the development of knowledge of pediatrics, communicable diseases, and mental diseases, new, very highly technical nursing procedures should be developed, tested, evaluated and written up for publication.

Records of a patient's symptoms, which would be of scientific value, could be collected easily by nurses. The effects of various conditions on the character of the pulse, the nature of the act of vomiting, further details about coughing in relation to various diseases, more of the nature of delirium, so often misunderstood, the entire

picture of the patient's convulsions, and the various positions of the patients in bed in connection with their ailments, are examples of kinds of symptoms which need to be studied. One nurse, by chance, discovered a new position which was helpful as a therapeutic measure for draining antrums. It would be interesting, enlightening, and encouraging to us all to know the contribution nurses have already made in the development of medical knowledge through their eternal vigilance and faithful record keeping. Careful records of symptoms similar to those mentioned could scarcely be made by anyone but the nurses, and this information would be invaluable to the medical and nursing professions as well as to future patients.

Another kind of experimentation which might be undertaken is concerned with methods of teaching this subject. Do we know to what extent we can use some of the newer educational theories in teaching nurses nursing? We hope to have many of our procedures exhaustively studied and some few standardized. Is it a useless waste of time for students to participate in developing a plan for procedures already standardized? On the other hand, how can we safeguard those procedures which can not be standardized? When a nurse thoroughly understands the underlying principles, should she not be encouraged to vary her method in order to adapt it to the conditions of different patients? This would give the student an opportunity for using her initiative safely and to good advantage to herself and patient. Some of the advanced nursing procedures, such as the care of a pneumonia or typhoid patient, are made up of many elements of elementary procedures already taught, and these could be built up in the classroom by student participation rather than by teacher demonstration. Undoubtedly we could do much more in the future than we have in the past to stimulate thinking, initiative, resourcefulness, adaptability and other forms of self-expression on the part of our students by using some of the newer teaching methods.

Some of these problems could be worked out in hospital laboratories of various schools, but a great many need a special place in charge of experts. What are some of the fundamental needs for undertaking this piece of work? They are: first, a few individuals who are interested and who have the disposition and time, and the special type of ability, to pursue research; second, a connection with scientific laboratories to which special biological and physical prob-

lems could be referred; third, a research laboratory where experiments in waste elimination could be carried out; fourth, groups of student nurses in two similar schools where the teaching equipment is of a good average kind and where properly qualified teachers would coöperate in the teaching experiment; fifth, specialists to handle the statistical data; sixth, ample rewards for the experimenters in the way of salaries or advanced degrees; seventh, a journal in which to publish the results of the work; and finally, funds for the whole project.

A few years ago, a great physician wrote, "The future belongs to Science. More and more she will control the destinies of the nation. Already, she has them in her crucible and in her balances." Practical nursing is the central subject of our whole professional curriculum. Scientific research is a method of study which may be used in any field to promote professional standards. Applied to practical nursing, scientific research would mean that the art of nursing the patient would be more nearly perfected in a shorter time than it could possibly be by the slow accumulation of knowledge gained through casual experience. After all, isn't the whole purpose of our education to promote health and improve the nursing care of the patient?

NATURAL SCIENCES IN SCHOOL CURRICULA

CERTAIN THESES PREPARED BY

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I. THE GENERAL PROBLEMS

IN the construction of curricula, the general problems of using the natural sciences are:

1. What useful functions to societies or to the members composing them can be served by natural science studies in schools from kindergarten through high school?

2. What useful functions can be served at the several curricula levels by the natural science studies considered as differentiated bodies of tested knowledge and probable hypothesis in such fields as astronomy, geology, electricity, optics, mechanics, chemistry, mineralogy, crystallography, hydrostatics, vulcanology, radio-physics, soil chemistry, physiography, natural geography, biology, bacteriology, botany, zoölogy, ornithology, dendrology, entomology, ecology, human physiology, genetics, bionomics, and many others?

3. What useful functions can be served at various curricula levels by natural science studies designed to elucidate the complex phenomena involved in separable or distinguishable fields of natural processes considered by themselves or as coördinated in man's service, as for example: the mechanics and chemistry of the explosion engine; the physics, biology, chemistry, and meteorology of a city's water supply; combustion in its many aspects; the sun and weather; the digestion of starches; the ecology, entomology, geography, and economics of the boll-weevil; the silver plating of brass; what happens when concrete hardens; the migration of birds; experimentations with explosives; and hundreds of others.

4. What useful functions at various curricula levels can be served by the use of natural science studies to idealize, instruct, and train in scientific method or the many species of scientific method?

II. SOME GROUND-CLEARING POSTULATES OR ASSUMPTIONS

It is believed that approach to the foregoing problems will be simplified and expedited if agreement, or justified documented disagreement, can be had to these theses, submitted as tentative postulates:

1. The contents of the various natural sciences can be clearly differentiated from the contents of the (*a*) mental and (*b*) social sciences. (In a very fundamental sense, these two divisions are also "natural" sciences, but common practice and common sense make satisfactory the differentiations postulated.)

2. The natural sciences will here be taken to include the several astronomical, earth, physical, chemical, biological, and physiological sciences.

3. The natural sciences will also be taken to include all scientific knowledge and techniques involved in interpreting or controlling composites of natural phenomena, such as tides, erosion, weather prediction, water supply, engine operation, gold mining, fish propagation, animal breeding, paper making, canal transportation, coal formation, etc.

4. It is assumed that the body of knowledge and technique usually designated by the unmodified term "geography" consists in part of "natural science" materials (natural geography, physiography, physical geography, regional geography, etc.) and in part of social science materials (political geography, economic geography, social geography, commercial geography, etc.). (Whether in school practice these should or can be separated is not here considered; but the extent and character of the takings from each that should be used in any curriculum, either uncorrelated or correlated with other subjects, should surely be capable of designation.)

5. Among the "social values" or "life's satisfactions" or "things of worth" which men, women, and, often, children now derive from appreciations or masteries of some or many phases of natural sciences the following are clearly to be distinguished:

a. Satisfaction of naïve curiosities, wonderings, or desires for "knowledge for its own sake." (Cultural Objectives.)

b. Use of scientific knowledge to conserve or advance health. (Health Objectives.)

c. Use of scientific knowledge to conserve and advance vital social coöperations in family, state, party, religious sect, and other valued social groups. (Civic, Moral, and Religious Objectives.)

d. Use of scientific knowledge in extending proficiency in particular vocations. (Vocational Objectives.)

6. Where the visible or otherwise distinguishable principal effects of any specific learning in the above fields are realized in the present or near future life of learners (that is, as satisfying childish or youthful needs) such objectives can profitably be called "developmental"; but where such visible effects are expected to accrue only in late or adult years they should be called projective or "deferred-value" objectives.

7. In general, vocational objectives will necessarily be of the projective order. (But the hypothesis is developed later that few of these should be attempted on a prevocational basis in schools of general education.)

8. In general, cultural objectives will be (or rather should be, since present high school courses are excessively formal and wishfully pragmatic) of the developmental order.

9. In general, health objectives should be predominantly projective, but with substantial emphasis on developmental objectives; (unless it be found that objectives of "body building" bulk large alongside those of disease prevention; and subject to the hypothesis later to be developed that very little if any of school science instruction as such should be expected to function towards health objectives).

10. In general, moral objectives will be of the developmental order; whilst civic and religious objectives will be of the projective order—but with some prominent exceptions.

11. The ordinary and everywhere available materials suited to instruction at almost any age level are scores, if not hundreds, of times too numerous to be embraced or comprehended by particular individuals.

12. From almost any body of scientific knowledge, many instructional units can be taken which are suited in some degree to the appreciational or learning capacities of children even from four to ten years of age. (Certainly these can be taken from astronomy, plant growth, electricity, meteorology, seed dispersal, crystallography,

bacteriology, infections, egg-hatching, pupa stages, burning glasses, earthquakes, falling bodies, ornithology, etc.)

13. In numberless cases, however, it will be found that items of scientific knowledge mastery or appreciation that will come with much difficulty for young children will come with utmost ease for the same children a few years later.

14. In great numbers of cases it will prove impossible, even with best intentions, to prevent children from accepting on the authority of teachers, without any adequate inductive verification, large and complex truth regarding such matters as, for example, the sphericity of the earth, the speed of light, the actuality of bacterial infections, the acceleration of falling bodies, the slight compressibility of liquids, etc.

III. THE CENTRAL PROBLEM OF VALUES

What are some of the distinguishable *functions* of natural science knowledge or technique in that adequate, optimum, or normally fulfilled life towards which schools should help to prepare children, youths, and adults?

By *functions* will be here meant *uses, services, helpful contributions.* If the possession of certain kinds of knowledge or technique enables a person better to preserve his health, enjoy companionship with his fellows, earn a living, keep himself and his own secure, satisfy natural curiosities, arouse new and lofty interests, such knowledge is said to function or to have functional value in his case.

Postulates.—The following are submitted as dependable postulates or basic assumptions:

1. The successful practice of the vocation of physician in civilized countries of our time obviously requires working masteries of many kinds of items or other units of natural science knowledge and techniques, especially from such fields as human physiology, bacteriology, chemistry, optics, toxicology, and the like. It is not apparent that for the vocational needs of the physician any substantial contributions from astronomy, geology, vulcanology, ornithology, or hydraulics would be functional. Modern medicine may find it increasingly useful, however, to utilize some of the findings of scientific meteorology, psychology, and embryology.

2. There are many vocations in which some working masteries of

some phases of some sciences are even now tangibly functional, and will be even more so as aims and methods of vocational training become more effective.

a. The carpenter may need certain extracts, selections, essences, or adaptations from physics, but none from biology.

b. The navigator may need extracts from astronomy, mathematics, and oceanography, but none from bacteriology or dendrology.

c. Farmer and homemaker may need very unlike selections from chemistry, plant physiology, and bacteriology, but only the farmer has any needs from geology, mineralogy, and physiography.

3. The successful conservation and promotion of his own health by any individual under present-day conditions obviously requires some degrees of some kinds of scientific knowledge. What these are may vary somewhat according to economic condition, habitat, vocation, age, sex, and other conditions.

a. To a man rearing a family in a region infested by hookworm certain readily accessible forms of scientific knowledge could obviously be functional towards prevention or cure of hookworm ailments.

b. Modern hygiene and sanitation give an enormous range of very serviceable extracts from physics, chemistry, bacteriology, biology, which the informed and trained individual can use in part in self-treatment, and in part in guiding himself to specialist service. But there are many sciences from which no such help comes, as well as many departments of physics, chemistry, and even biology and its subscience, entomology, which yield nothing.

4. It is obvious that many children and adults find much pleasure in apprehending the findings of science without any relation of such findings to the satisfaction of practical or so-called utilitarian needs. "Sunday Supplement" newspaper presentations often fulfill this function, whether they are genuinely scientific or pseudoscientific. So do many current articles in high-class popular magazines, and not a few popular books on scientific topics. Moving pictures, radio talks, Yellowstone excursions, and platform lectures fulfill the same function more or less well and more or less truthfully.

a. Let us call this the "wonder function" of the natural science studies, the term to connote both the curiosity- and wonder-arousing as well as the curiosity- and wonder-satisfying functions.

b. The "wonder-functioning" of natural science presentations

is surely as culturally important and valuable as the "wonder-functioning" presentations of ancient or otherwise remote history or the æsthetic functionings of orchestral music or grand opera.

5. Is there still a fourth type of useful functioning of certain types of scientific knowledge that might be called the "civic appreciational"? Are there certain extracts from, or applications of, scientific knowledge, appreciations of which would make more useful, more generous, more widely coöperative, citizens in coöperatively sustaining government, and other "large group" activities?

It is submitted that some natural science knowledge is even now so functional; as, for example:

a. Appreciations of the meteorological, geological, topographic, biological, chemical, and physical conditions essential to be met in providing a modern urban water supply system. (But this probably fits better into sanitation.)

b. Appreciations of the scientific achievements which have made possible modern "super-power" systems, with all their confused implications for political control.

c. Appreciations of the scientific advances which in 1914 gave Germany her initial advantages in munition production, and the probable close relationship for years to come of the dyestuffs industries and chemical war-preparedness.

IV. CERTAIN HYPOTHESES AS TO EDUCATIONAL VALUES, SCHOOL COURSE OBJECTIVES, AND METHODS OF INSTRUCTION IN THE NATURAL SCIENCES

Because objective criteria of educational values seem as yet unobtainable in most departments of instruction—largely because the social sciences or eudemic sciences have as yet no serviceable criteria of comparative values—it is submitted that progress in curriculum reorganization must continue to employ the many subjective social valuations of various kinds and degrees that all men hold, but subject to conditions of rigorous and refining treatment such as have as yet been only foreshadowed.

The following hypotheses are submitted with a view to prompting analytical thinking and logical detection of common elements in those eudemic valuations that men now hold and in their resultant traditional educational valuations.

1. It is submitted as a probably sound hypothesis that the thousands of very specific values, satisfactions, or things of worth now derived by sundry adults and children from natural science studies (using the term "studies" in its broadest sense) fall into two largely unlike classes or divisions, according as optimum or functional attainments in them are prevailingly of the character of "appreciations" or of "performance masteries."

a. The "knowledge" that most of us have of the solar system (central sun, revolving planets, elliptical path of earth, etc.) is clearly of the order of the "appreciational"—analogous to appreciations of poetry, paintings, and major elements in Asiatic geography.

b. The knowledge of the behaviors of heated gases that a fireman should probably have is of the order of "performance mastery" —analogous to masteries of spelling, the multiplication table, etc.

c. For the great majority of us "performance masteries" of either the data or the research techniques of any phases of astronomy would be quite without real value.

d. For the great majority of us some appreciations of the wonder-inspiring, curiosity-satisfying, and perhaps modesty-begetting findings of astronomy might have very distinct values—not utilitarian, of course, but rather of higher spiritual or preferably "spirital" kinds.

2. It is submitted as a probably sound hypothesis that the greatest single source of confusion and futility in the teaching of natural sciences in elementary and secondary schools within recent years has been failure to distinguish appreciational from performance objectives.

3. It is submitted as a probably sound hypothesis that when courses of physical education, especially in the fields of hygiene and sanitation, shall have been adequately developed in the several levels of schools from kindergarten to liberal college, it will be found unnecessary to use nature study, general science, or special science courses as means of imparting knowledge or providing training towards any of the objectives of physical education.

a. Many attempts are now made to lay foundations of serviceable sex-knowledge and ideals in courses in biology. But surely such procedures, perhaps justifiable now for readily understood reasons of delicacy and impersonality, are probably of little or no genuine functional effect for the majority of early sophisticated boys, and

surely they will presently be superseded by far more direct and efficacious *ad hoc* instruction when once the specific objectives and the adequate pedagogic methods of this difficult area of instruction and training are understood.

b. It is frequently urged that the "general science" courses now rapidly developing for grades seven to nine should include as prominent objectives instruction toward appreciations and control masteries in such areas of hygiene and sanitation as purification of water supply, balanced dietaries, control of infections, healthful ventilation, and many others. But do not such claims overlook or undervalue current progress in all grades in developing instruction in hygiene and related subjects, always using so much of the findings and techniques of the natural sciences as may prove requisite, which is steadily being made by departments, teachers, textbooks, and projects in the field of physical education?

4. It is submitted as a probably sound hypothesis that as vocational schools are increasingly developed for the several distinctive farming vocations, trades, professions, homemaking vocations (of which at least three or four distinctive species can now be defined), and other vocations which demonstrably should include some "takings" from one or more fields of natural science in their "related technical knowledge," such schools will either make themselves wholly responsible for supplying their specific needs of such science instruction or training, or else that they will unmistakably indicate to precedent schools opportunities to offer genuinely prevocational courses recommended and permitted only to students likely later to enter such vocational schools.

a. To an increasing extent the more advanced professional schools which have large requirements of "natural science findings and techniques" already do this. Medical colleges and such engineering colleges as presuppose two years of general college courses prior to strictly professional specialization indicate to the liberal college the possibilities of providing certain fairly definite and genuinely prevocational "premedical" and "preëngineering" courses in biology, mathematics, chemistry, etc.

b. It will later be contended that the only justification for the offering of rigorous "training" courses in physics, chemistry, biology, and also mathematics in high schools, in which courses much emphasis

is laid upon exact manipulative and highly quantitative techniques, is that such courses are in expectation and fact prevocational.

c. All recent " job analyses" and "curriculum research" looking to school provision of realistic training for such vocations as poultry farmer, maid-of-all-work domestic service, machine shop operative specialties, carpentry, barbering, automobile repair, and other vocations seem to indicate the practical impossibility of suggesting really functional prevocational science courses to be offered in junior high schools or first two years of senior high schools that shall be even in moderate degree "functional" for the specific vocations suggested.

d. Experience seems even to indicate that girls taking the fairly rigid laboratory courses in physics and chemistry developed under pressure of college entrance requirements in our larger high schools do not find the knowledge or techniques of these functional to any significant degree in the home economics courses which they may concurrently or later take.

5. It is submitted as a probably sound hypothesis that the "social values" which will primarily be sought, and which will therefore control choice of specific objectives, subject matter, and methods, in the better elementary school "nature study" courses, junior high school "general science" courses, senior high school "special science" or survey courses, and even liberal college courses in "evolution," earth science, ecology, and the like, will be in the near future essentially "cultural" rather than utilitarian (towards vocational, handyman, health-conserving, home keeping, or other pragmatic ends) in the ordinary sense.

a. Cultural objectives in the sense here suggested are of many kinds and probably of very different intellectual, æsthetic, or even spiritual (or "spirital") significance at different age levels from six to twenty-two. But in all cases they imply large quantities of "satisfaction of curiosity for its own sake," "enhancement of vision or appreciation" (again with no practical purpose in view), and even satisfaction of a variety of quasi-philosophic or religious "desires to know" about the reaches of the sidereal universes, the beginnings of human life, the evolutionary process, the physics of musical harmony, symbiotic balances in tropical life, oceanic microörganisms, and the like.

b. It is submitted as a useful subhypothesis that to a large extent the "nature study" so energetically fostered a few years ago by many enthusiasts in the more progressive elementary schools failed largely, first, because it "jumbled" supposedly prefarming, hygienic, and strictly cultural objectives; and, second, because it constantly strove to procure early mastery of abstract principles.

c. It is also submitted that to a large extent present attempts to develop attractive and really functional courses in "general science" adapted to youths from twelve to fifteen years of age are destined to remain confused and largely futile so long as the primary purposes of such courses are held to include: (*a*) elements or foundations of hygienic instruction, (*b*) considerable ranges of general "useful" knowledge for home, civic, travel, or other life, or (*c*) early mastery of "principles."

In other words, it is contended that success will attend development of texts and introduction of courses in general science largely in proportion as these focus on "cultural objectives" to be achieved by methods of "appreciational" pedagogy.

6. It is submitted as a probably sound hypothesis that the best sources of suggestion and analogy to guide the development of natural science courses of nonutilitarian character in our schools during the next few years (until we can discover criteria of values in this field itself) will be found in recent developments of literature teaching at all levels.

a. In the latter field the guiding principles seem to be substantially these:

(1) The valid objectives of literature (including orally told stories in kindergarten and low primary grades) are essentially cultural or nonutilitarian in character.

(2) For any given age level there are scores, if not hundreds, of times as much literature available as individual learners can assimilate.

(3) The natural interests of pupils of any one age level in particular examples of literature will vary greatly according to natural abilities, environments, etc.

(4) Experimental studies of young readers' choices and enthusiasms, made especially by librarians, have resulted in the formation of extensive lists of books

adapted to particular age levels, and these are sometimes further differentiated along sex and ability lines. (So that, for example, if one wishes to find what are fifty books most preferred by girls of super-median intelligence, twelve to thirteen years of age, he can in some degree obtain well-tested findings.)

b. For example, it is here provisionally contended that "general science" for the seventh grade should be presented to pupils:

(1) As a great array of "teaching units" (readings, moving picture presentations, laboratory demonstrations, facilities for pupil experimentation, excursions, lectures, etc.) from which individual pupils should elect the very few that their time and competing interests permit. (Taking a few cups of water from a big spring, all the waters of which are equally good.)

(2) With such objectives that we teachers shall not feel disturbed if certain pupils miss or omit particular areas or topics in their preoccupations with other topics.

(3) Under such pedagogic methods and standards of attainment that the chief learning products will be appreciations rather than intellectual grasp of abstract principles or other formal knowledge. (It should always be kept in mind that we know as yet hardly anything about the "pedagogy of (teaching) appreciations" of any sort.)

V. SOME IMMEDIATE PROBLEMS

It is submitted that these findings should suggest course research procedures capable of providing useful answers to such questions as:

1. Should not the courses in physics and chemistry which are now customary in American high schools and which have assumed their present character almost wholly under direct pressure of college entrance requirements, be further developed as strictly preëngineering courses? Such courses as now administered certainly only faintly fulfill cultural, civic, or health-conserving functions; and, no less certainly, they are hardly at all prevocational to agricultural, homemaking, trade, or factory vocations.

If made definitely preëngineering, such courses obviously should be recommended only to prospective engineers.

2. In the "general science" courses now being so extensively experimented with in Grades 7 to 9 should not all possible or seeming "prevocational," "vocation-finding," "health-conserving," "principle-mastering," and "mental-disciplinary" functions or purposes be rejected or greatly subordinated? Should not only cultural, civic appreciational, and "personal maintenance" functions (exclusive of health and vocational maintenance) control?

(All this on the assumption that all schools will provide all necessary health-conserving instruction and training in departments of physical education, and that specific vocational schools will increasingly take charge of all science applied in vocations.)

THE EDUCATIONAL CLINIC AS A LABORATORY FOR STUDENTS IN TRAINING

By BESS V. CUNNINGHAM

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THE Educational Clinic of Teachers College was established in answer to the widespread demand for increased facilities for uniting interdepartment interests in the problems of young childhood and at the same time providing an extensive field of student endeavor in all phases of child guidance. Close contact with actual children has always been deemed an essential part of the training of any student who is preparing for professional service as teacher, clinician, field leader, or homemaker.

Within the past few years the nursery school has swept the country by storm. The advantages of a nursery school as a demonstration center and also as a laboratory for studying young children are obvious.

The clinic as a coördinating agency in the University has been much less widely acclaimed partly because it does not undertake to demonstrate child caring procedures and partly because the term clinic has so long been associated in the public mind with deviating, unfortunate, and misfit children.

The Educational Clinic was established in Teachers College in the fall of 1924 as one phase of the activities of the Institute of Child Welfare Research. From the first it was a coöperative enterprise, as the initial experimental procedures, including a system of records, were evolved by a committee of faculty members appointed by the Dean. This commitee included representatives of various interests, —educational psychology, nutrition, nursing, health, and elementary education. The committee members met weekly throughout the academic year and together with a consulting psychiatrist and the staff members appointed specifically for the Clinic constituted a staff which reviewed all cases examined in the Clinic and made recom-

mendations of procedures. During the first year of the experiment members of this committee gave so freely of their services that most of the psychological, health, and nutrition examinations of children were the result of their voluntary efforts. A few students participated in the procedure of the first year. These were for the most part students with a major interest in educational psychology and in nutrition.

The Clinic was first opened to any agency or individual who sought help in connection with a child problem which was not obviously medical in nature. The only age limitation stated was the upper limit of eighteen years. The actual range in ages was from two to eighteen.

The reasons given for referring the children to the Clinic varied all the way from definite problems, such as wrong grade placement in school, to such indeterminate accusations as "unruly" or "nervous." In the analysis of these difficulties of adjustment in the home and in the school almost the entire range of child problems seemed to be indicated and the possibilities of using the Clinic as a means of training students with many interests were thus demonstrated during the first year.

At the beginning of the second year the scope of the Clinic was enlarged. A program of special research was inaugurated, facilities for student participation were greatly increased, and the responsibility for examinations was placed more largely upon regularly appointed staff members. Those members of the original committee who were interested in making immediate use of the Clinic as a laboratory for their own students continued in active service throughout the second year.

This committee agreed that some measures should be taken by means of which routine clinical service could be extended to unselected normal children and study of the same children continued for a period of several years. To this end a policy of examination of one-year-old and three-year-old children was adopted. The children were so selected as to make the sampling as near normal as possible. The lists of the New York Diet Kitchen and the Henry Street Nurses Association were used as a basis for selecting children living in the neighborhood of the Clinic. Letters were sent to the mothers of these children, stating that a group of the Teachers College faculty

expert in certain aspects of child care would like to examine their children at the time of their half year birthdays, giving specialized reports to the parents in return for the opportunity of studying their children. The invitations were received most cordially. Seventy-five one-year-old babies and a smaller number of children ranging in age from two to three years were examined during the year, many of them returning for a second examination.

An interview with parents, psychological tests, standard and experimental, health examinations, anthropometric measurements, tests of gross motor coördination and analysis of diet constituted the first essentials of clinical procedure. One of the most important aspects of the series of examinations was the possibility offered for studying personality differences and behavior difficulties among one-year-old infants. No quantitative measure of social adaptation could be made, but the responses of the infants and the observed attitudes of the mothers were made matters of record. These records proved most valuable when the children were returned six months later for a second series of studies.

Examinations of children referred to the Clinic at the time of their birthdays constituted but one phase of the work. The children of the two nursery schools were also examined and case records placed on file for use by teachers and students working especially with these groups.

It also seemed necessary to continue the original type of clinic cases, children who presented some problem of deviation. These children offered the best materials for student enterprise because difficulties were thrown into high relief. In this connection a need for a different type of clinic worker was discovered. In most instances the difficulty of the child could be traced to mistakes in the home. Carrying the analysis further, it was sometimes discovered that the family situation could be greatly benefited by a readjustment of the time and money budget. In this way the facilities of the Clinic were thrown open to home economics students who had a background of household management.

Student participation in the Clinic proved most satisfactory during the second year. Members of classes in clinical psychology gave the examinations, took interviews, and visited schools and homes. Students who were skilled in nutrition studied the diets of the children

referred. Other students visited homes and made studies of household efficiency. All students took part in the staff discussion of cases so that the specialized contribution of each one could be considered in the light of other findings.

During the third and present year the Clinic is continuing the program as previously outlined with the addition of further student opportunities. A roll of reasonably permanent families who send their children to the Clinic every six months is used for survey purposes. Students visit these homes to acquaint themselves with home problems and to make report upon recommendations previously made by the Clinic staff. Clinic examinations are also organized in such a way that students who desire only a brief acquaintance with the Clinic may observe at stated periods. In another year it would be extremely desirable to include among the students participating in the Clinic those with a major interest in health and in social case work.

The educational clinic has a definite contribution to make to the present-day interest in parental and pre-parental education. It is a necessary supplement to the nursery school, but its province is distinct. Both nursery school and clinic train child experts, and research and field workers. The nursery school, furthermore, aims to train teachers while the clinic aims to train clinicians. The nursery school provides a laboratory for demonstrating and practicing child care. Children who present difficult problems of behavior are re-educated in the nursery school, in coöperation with the home. Children and parents guided by the clinic must be helped through the home and outside agencies without any possibilities of demonstration. The methods of analysis and follow-up are often quite different. The number of children in the nursery school is necessarily limited. The clinic adds to the number of cases, extends the age range, and adds variety to the problems studied. The clinic further acts as a possible control in studies aiming to evaluate nursery school procedures.

The Teachers College experiment of the past two years has demonstrated the fact that a clinic can be operated at relatively small expense and that through it varied interests in the University may be coöperatively represented. The educational clinic cannot take the place of the nursery school any more than the nursery school can take the place of the clinic. However, in situations where the cost

of maintaining a nursery school is prohibitive, the maintenance of a clinic is entirely feasible, especially if the various types of service are voluntarily assumed by members of a university staff. The ideal plan of training workers in the field of early childhood should of course include both types of laboratory facilities in order that the absolute necessity for breadth of viewpoint may be more fully appreciated.

A STUDY OF THE MOTION PICTURE PREFERENCES OF THE HORACE MANN HIGH SCHOOLS

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THIS study of the motion picture preferences of the Horace Mann High Schools was undertaken by the Motion Picture Committee of the *Bulletin of the Parents Association,* primarily as a means for guiding the committee in their recommendations of films in the *Bulletin.**

In preparing the questionnaire, the films selected were all good enough as productions to be classed on the "Selected List" of the National Board of Review. With one exception, Grass, all were either recent pictures or else still frequently shown; and all, as far as could be learned, had been seen by many of the boys and the girls of the Horace Mann Schools. The films selected included different types of photoplays and covered a wide range of interests, from Tony Runs Wild to Variety and Don Juan. The different types represented were native life (like Grass, Nanook of the North, and Moana); spectacles and war; screen comedy; "Westerns"; animals and children as actors; college plays; period plays; romance and adventure; romance in modern life; problem plays (like Stella Dallas and The Scarlet Letter). This classification by types is not followed in this report; instead, the films are considered individually.

The questionnaires were presented the week after the Christmas recess, a period of more or less movie-going. The answers to the last question showed that 11 per cent of the boys and 13 per cent of the girls did not go to the movies at all during the Christmas holidays; a small number, 19 boys and 3 girls, went ten times or more. The median Horace Mann boy or girl went to the motion pictures three times; to all other forms of entertainment (theatre, musical comedy, concert, opera) twice.

* The Motion Picture Committee, Mrs. Frank Burrows, Mrs. Percival Symonds, and Mrs. Allan Abbott (Chairman) are greatly indebted for advice given by Professors Abbott and Symonds of Teachers College.

QUESTIONNAIRE

Name.....Grade....Age....Yrs....Months....Date.....

1) In the following list put a check before every film you have seen.
2) Mark the ones you liked most with M. Do not mark more than 3 films.
3) Mark the ones you liked least with L. Do not mark more than 3 films.
4) If a film you especially liked is not on this list, name it here:
5) If a film you especially disliked is not on this list, name it here:

Mark here		Mark here	
1	Amateur Gentleman, The	28	Lady Windermere's Fan
2	Bardelys the Magnificent	29	Little Annie Rooney
3	Bat, The	30	Lovey Mary
4	Battling Butler	31	Mare Nostrum
5	Beau Geste	32	Moana
6	Ben Hur	33	Monsieur Beaucaire
7	Better 'Ole, The	34	Nell Gwyn
8	Beverly of Graustark	35	Nanook
9	Big Parade, The	36	Old Clothes
10	Black Pirate, The	37	Old Ironsides
11	Boheme, La	38	One-Minute-to-Play
12	Brown of Harvard	39	Paradise
13	Declaration of Independence	40	Quarterback, The
14	Devil Horse, The	41	Scarlet Letter, The
15	Don Juan	42	Sea Beast, The
16	Ella Cinders	43	Son of the Sheik, The
17	Everybody's Acting	44	Sparrows
18	Exit Smiling	45	Stella Dallas
19	Faust	46	Subway Sadie
20	Flaming Frontier, The	47	Tony Runs Wild
21	Flying Horseman, The	48	You'd Be Surprised
22	For Heaven's Sake	49	Vanishing American, The
23	Four Horsemen of the Apocalypse	50	Variety
24	Gold Rush, The	51	Volga Boatman, The
25	Grass	52	War Paint
26	Hero of the Big Snows, A	53	We're in the Navy Now
27	Kiss for Cinderella, A	54	Winning of Barbara Worth, The

6) Name something you especially liked in the films you marked M.

7) Name something you especially disliked in the films you marked L.

8) How often have you been to the movies since school began this fall:

Less than once a month?	Once a week?
Once a month?	Twice a week?
Twice a month?	More often?

9) State how many times in the Christmas Vacation you went to

the movies.....	concerts.....
the theatre.....	the opera.....
musical comedy.....	

"How often do you go to the movies?" was answered by 269 boys and 265 girls. The answers showed that movie attendance of the boys reaches a peak in the Third Year, when 49 per cent go once a week and nearly 20 per cent twice a week or oftener. This falls off a little in the Fourth Year and more in the Fifth; but in the Sixth 66 per cent of the boys go once a week or oftener. Movie attendance of the girls reaches a peak in the Fourth and Fifth Years, when 51 per cent in each year go once a week or oftener; in the Sixth Year this falls off to 40 per cent.

The choice of films proved to be a fortunate one, as only three films (Nos. 13, 19, and 39) had to be dropped for lack of sufficient returns. Two boys and two girls have seen 47 of the 54 films on the list! Four boys and two girls have seen but one of the films on the list. The median boy has seen 17 of the films. The median girl has seen 15 of the films.

The answers to the questionnaire proved satisfactory, also, because of the large number of comments on the films marked M (most liked) and L (least liked). Of the 286 boys who answered the questionnaire, 237 made comments; of the 273 girls, 257 made comments. The comments evidenced interest and the commentator's real opinion; one girl liked Don Juan because it was not recommended by the *Bulletin*,—that, however, may have been a "real opinion," too.

In giving a rating to the films, consideration had to be given to the proportion of the likes and dislikes to the number of times a film had been seen; also to the fact that each film seen was marked in three ways: as seen, as liked (M), and as disliked (L). Therefore M was weighted as 3, neutral as 2, and L as 1. Neutral would of course be T (the times seen) less the sum of M and L. The sum of the weighted scores, divided by the number of times the film was seen, gives the score. For illustration, in the case of Film No. 1, The Amateur Gentleman, which was seen by 53 boys, liked by 2, disliked by 7, the calculation of the score is

$$\frac{3\times 2+2\times 44+1\times 7}{53}=1.905$$

Tables I and II give the films arranged in the order of this rating.

These two tables, together with the comments made by 494 individuals, will form the basis of this inquiry into the likes and dislikes

TABLE I
Boys' Rating of Films

Rating	Title
2.66	Beau Geste
2.64	Big Parade, The
2.62	Old Ironsides
2.45	Ben Hur
2.37	Better 'Ole, The
2.18	Winning of Barbara Worth, The
2.16	Variety
2.15	Four Horsemen of the Apocalypse
2.14	Scarlet Letter, The
2.12	Sea Beast, The
2.09	Bat, The
2.09	Black Pirate, The
2.08	Lady Windermere's Fan
2.08	You'd Be Surprised
2.07	Don Juan
2.06	Stella Dallas
2.05	Brown of Harvard
2.05	Flaming Frontier, The
2.05	Moana
2.05	Quarterback, The
2.05	Vanishing American, The
2.05	We're in the Navy Now
2.04	Volga Boatman, The
2.01	Battling Butler
2.00	Bardelys, the Magnificent
2.00	Hero of the Big Snows, A
2.00	Monsieur Beaucaire
1.98	Gold Rush, The
1.98	Mare Nostrum
1.97	For Heaven's Sake
1.93	Beverly of Graustark
1.92	Everybody's Acting
1.92	One-Minute-to-Play
1.92	War Paint
1.91	Amateur Gentleman, The
1.89	Son of the Sheik, The
1.88	Exit Smiling
1.88	Old Clothes
1.88	Tony Runs Wild
1.87	Nell Gwyn
1.87	Subway Sadie
1.86	Little Annie Rooney
1.85	Boheme, La
1.85	Lovey Mary
1.83	Grass
1.80	Flying Horseman, The
1.79	Nanook
1.76	Devil Horse, The
1.71	Ella Cinders
1.70	Sparrows
1.68	Kiss for Cinderella, A

TABLE II
Girls' Rating of Films

Rating	Title
2.70	Big Parade, The
2.63	Ben Hur
2.59	Beau Geste
2.44	Old Ironsides
2.32	Vanishing American, The
2.19	Scarlet Letter, The
2.18	Better 'Ole, The
2.16	Winning of Barbara Worth, The
2.14	Stella Dallas
2.12	Brown of Harvard
2.12	Sea Beast, The
2.11	Don Juan
2.11	Quarterback, The
2.10	Bardelys, the Magnificent
2.10	Black Pirate, The
2.10	Boheme, La
2.10	Volga Boatman, The
2.06	Four Horsemen of the Apocalypse
2.05	Bat, The
2.04	Little Annie Rooney
2.04	Lovey Mary
2.04	Monsieur Beaucaire
2.04	One-Minute-to-Play
2.03	We're in the Navy Now
1.98	Everybody's Acting
1.98	Kiss for Cinderella, A
1.96	Mare Nostrum
1.95	Amateur Gentleman, The
1.95	For Heaven's Sake
1.95	Old Clothes
1.94	Beverly of Graustark
1.94	Son of the Sheik, The
1.93	Devil Horse, The
1.92	Ella Cinders
1.92	Hero of the Big Snows, A
1.91	Flaming Frontier, The
1.91	Sparrows
1.91	Lady Windermere's Fan
1.90	Moana
1.90	Nell Gwyn
1.89	Subway Sadie
1.88	Battling Butler
1.86	Exit Smiling
1.83	Nanook
1.81	You'd Be Surprised
1.78	Tony Runs Wild
1.78	Variety
1.78	War Paint
1.75	Flying Horseman, The
1.75	Gold Rush, The
1.59	Grass

of motion pictures by the Horace Mann High Schools. The agreements and disagreements between the boys and the girls are most strikingly shown in the films that score highest and the films that score lowest. The ten top films, including on the girls' list two films tied for the tenth place, and the ten bottom films will be especially considered.

The most striking fact in Table I and Table II is the agreement between the preferences of the boys and the girls; for in the top ten, eight of the films are the same in both lists. The Big Parade appears on both as one of the two highest scores. The Winning of Barbara Worth appears with nearly the same score on each. The Sea Beast appears with exactly the same score. The films occupying the remaining places in the top ten on each list are the following:

Boys' Rating	Title	Girls' Rating
2.05	Brown of Harvard	2.12
2.06	Stella Dallas	2.14
2.15	The Four Horsemen	2.06
2.05	The Vanishing American	2.32
2.16	Variety	1.78

The last two, The Vanishing American and Variety, show the greatest amount of difference in the ratings, and will be considered individually, with the help of the comments. It should be said here that the comments are of two sorts, a general comment on the three films selected for the mark of M or L, and comments on individual films. The general comments differ in fineness of discrimination, but study of them through all the years of the two schools shows that they agree in naming, as the essentials of a good film, these elements: good story, good acting, good setting. Good filming also interests many, the older boys particularly. So, as a standard for judging a film, these four essentials, story, acting, setting, and filming, would represent the general standard of the boys and the girls and will be a convenient one for us to work with here.

The Big Parade. The Big Parade receives favorable, or rather, enthusiastic, comments from 94 boys and 59 girls. The story receives from the boys 33 comments; the good acting, 31; the setting and specific scenes, 28; the filming and "good directing" or "way pro-

duced," 23; realism or "what the war was like," 15; specific emotional comment, 24; humor, 12; ethical comment, 5. The elements in the story that are commented on are, in the order of number of comments, the story or plot; subject-matter (war); action, suspense, "interest held to the end"; characters well portrayed; and single comments "different," "not inconsistent," "good titles." This comment by a Fifth Year boy is an unusually thoughtful expression of the interest in the story. "The Big Parade did not center on any one person. The characters were only part of the general scheme. It pictured the sentiment, the thoughts, and the action of three different types of men in the World War."

The comments on specific scenes include war scenes, mentioned by 20, and the following. A First Year boy says, "I liked the battles and where they were chewing gum." A Fifth Year boy says, "Got a thrill out of the battle scenes and the parade of the wagons," and a Sixth Year boy says, "I liked the going up to the front of the trucks and the slow charge of the men." This comment of a Fifth Year boy well expresses the general opinion of the film: "Good photography—Renee Adoree—the war scenes marvelous—the three companions well taken—a good love story with good humor." The acting of Renee Adoree, however, is not usually singled out from the good acting as a whole.

The emotional element, as stated above, receives 24 specific comments, not including the mentions of war or fighting, which imply emotional reaction. "Exciting" or "excitement" is mentioned 15 times, pathos twice, romance twice, human interest twice, "not slushy" once. Evidence of ethical interest is shown in four comments on "the patriotic spirit"; one on "horrors of war"; and one expressing a liking of "the three friends." The importance of the emotional appeal, with some boys, is evidenced by the comment of two Sixth Year boys, who say, "Good blending of excitement, humor, and romance," and "Action, pathos, and good direction, the fundamentals of a good picture in my estimation."

One dissenting opinion should be recorded among the boys: "Too much war"; and one of the girls makes the same comment.

Like the boys', the girls' comments center on the same striking characteristics: 10 on the good filming, 22 on the story, 27 on the acting, and 30 on the realism of the war scenes. Some of the comments

suggest a strong informational interest; for instance, "The Big Parade gave me more knowledge of the war." A Fourth Year girl said, "The Big Parade was what opened up the war to me. I enjoyed the wonderfully realistic scenes; the marvelous enthusiasm of it all." In proportion to those commenting, there are fewer comments by girls than by boys on the filming. There are about the same number by both boys and girls on the emotional and ethical appeal, but instead of the boys' simple comment, "exciting," the girls speak of "the marvelous enthusiasm of it all" or say that it is "thrilling and stirring." Three comment as liking "sad parts," (one in this way, "sad and interesting"); two comment "not too much love." The girls are also more specific in matters of ethical interest. Instead of "fine characters" the girls say, "Showed how a soldier could sacrifice himself for the sake of a friend," or "Wonderful courage of the soldiers," or "Wonderful courage of the hero." A boy and a girl have each a comment on "the horrors of war."

Specific scenes mentioned are: by a First Year girl, "Where he taught the French to chew gum"; by a Second Year girl, "Where the soldier went back and got the French girl"; and by Third Year girls, "War scenes, and scenes showing the three soldiers together" and "Crossing of No-Man's-Land in open-order formation."

The largest number of comments by both boys and girls have centered around the same characteristics, with one decided exception. Twelve boys mention "humor" as one of the reasons for liking The Big Parade, and not a single girl thinks humor important enough to mention.

Beau Geste. In Beau Geste, some of the comments give the flavor of this photoplay very exactly. A boy says, "I liked the adventurous setting and the mystery surrounding Fort Zinderneuf." A Sixth Year girl liked "the way the mystery was introduced and then explained." A very adequate summary of Beau Geste is the following, by a Fifth Year boy: "Beau Geste—followed book—suspense—wonderfully acted—good settings—excellent plot—with good direction —action." All the elements listed by this boy are generally recognized by the boys and by the girls. As in The Big Parade, the acting receives a very large number of favorable comments by both boys and girls. But almost equally the various elements that go to make up the actual construction of the story are felt. The critic

quoted above stresses this fact in mentioning first "followed book" and "suspense." The comments on the story itself concern plot, subject matter, mystery and suspense, truth to life ("not improbable," "not inconsistent"), "different," "followed the book," and "the characters protrayed." These are listed in the order of the number of comments given, the same order being true of both boys and girls. The total number of comments on all these elements in the story itself, both for boys and for girls, is as great as the number of comments on the acting. Next in order come favorable comments on the setting, or the filming. The scenes which are specially mentioned are the Arab attack on the fort (also described by a boy as the defending of the fort) and the Viking funeral of Beau Geste. Each receives the same number of mentions from boys and girls. One Fifth Year boy mentions "mob scenes and childhood scenes."

The adverse criticisms of Beau Geste are: "Too much like the book" (from a Fifth Year boy); "Boring after reading novel" (from a Fifth Year girl); and these more justifiable reactions from two Third Year girls: "I disliked the gruesome excitement" and "Matter too sad and gruesome."

The most striking difference between the boys and the girls is shown in the comments on the three brothers. The girls make several such comments; one also about Sergeant Lejaune. An adult might expect this last to be a comment on his brutality; instead, it is "the wonderful leadership of Sergeant Lejaune and how he deceived the Arabs as to the number of the garrison." The comments about the brothers are these (from girls from the First to the Sixth Years): "The love of the brothers"; "The great love of the brothers for each other and their heroic sacrifice for each other"; "Devotion of the three brothers"; "I admired all three of the brothers"; "I enjoyed it because of its lovely spirit"; "The way the love of the three brothers bound them together through thick and thin." The boys may feel this element of brotherly loyalty, but they don't say so. Persistent search does not reveal a single comment mentioning the devotion of the brothers; the only comment using the word brothers is, "Three brothers well portrayed."

Old Ironsides. There are only a few comments on Old Ironsides, and these center on "the acting" and "the filming." One special feature, the use of the enlarged screen, attracts attention from

both boys and girls equally. About equally also, "the patriotic spirit" is commented on, and "the excitement." A Fifth Year boy says, "Excellent nationalism that could thrill any American soul." The use of the enlarged screen at the height of this moment of patriotic feeling and with the interesting action of the sea battle makes a combination which arouses a fury of enthusiasm in the theatre and which is reflected here by over ten each of the boys and the girls who write as a reason for liking Old Ironsides "the sea-fight" or "battle with the Barbary pirates." As with The Big Parade, a few mention "historical background" or "something to learn in this film"; and there are a few who comment on the realism and the correctness of detail. One Second Year boy has, as his only comment, "The ships and guns which were absolutely correct." Another comment by a First Year boy is worth adding, for he has felt what might be called the essence of drama, "Fighting—escaping."

One detail should have special emphasis. Six boys mention "humor," but not a single girl mentions "humor."

Ben Hur. Ben Hur is described by a Fifth Year boy as "a gorgeous spectacle, beautifully treated." That pictorial appeal was evident in the comments of both boys and girls. Ben Hur is commented on by 67 boys and 93 girls. With both boys and girls the setting and the filming, with mention of special scenes, attract by far the largest number of comments: 57 in the case of the boys and 69 in the case of the girls. The acting receives the next number of comments with the boys (29); the story, next (16). With the girls, the order is reversed, the story receiving 28 and the acting 19. The historical value of the film is mentioned by 6 boys and 20 girls; 11 of the girls are of the Second Year, and one of the number adds "because of last year's study," which might account for the difference in boys and girls here. "Exciting" or "excitement" appears in 7 of the boys' comments and in 14 of the girls'; perhaps the word seemed unnecessary to the boys, who had mentioned twenty-three times their liking for the chariot race. One boy explains, "The thrill that went with the chariot race." The girls' liking for excitement shows, too, in twenty-five mentions of the chariot race. "Pathos" is mentioned by two boys; "not too much love" by three girls.

Thus far, then, there seems slight difference in the reaction of the boys and the girls toward Ben Hur. The special scenes listed, how-

ever, show a decided difference, and may account for the reason why Ben Hur stands second on the girls' list. Twenty-three boys liked the chariot race; nine, "the galleys and the sea fight"; one speaks of "the magnificence of re-built Jerusalem"; and one Fifth Year boy of "the Nativity scenes." Twenty-five girls like the chariot race; eight, the galleys and the sea fight; but these scenes also were liked: "When Christ healed his mother and his sister"; "Where Ben Hur saved his future father-in-law's life"; "The first few scenes showing Mary"; besides three other mentions of "the Bible story scenes." The double interest in the film is expressed in this way by a Fourth Year girl, "I liked Ben Hur's courage and the exciting experiences he went through"; and by a younger girl, "I liked it because it was all about Christianity with a thrilling chariot race." There are four other comments on Ben Hur's courage and four on the fact that "the story is worth while." To compare with all this evidence of ethical interest on the part of the girls as quoted above, there is from the boys only one mention of Ben Hur's courage, and only one mention of the Nativity scenes. This general comment of a Fourth Year girl perhaps expresses what the girls found, besides the chariot race, in Ben Hur: "What I most liked is that they (Nos. 5, 6, and 49) have a great deal of truth in setting and plot. Not just a silly love story. They have some deeper meaning." The other films referred to here are Beau Geste and The Vanishing American.

Several criticisms are recorded by the few who marked Ben Hur L. A boy of the Fourth Year says, "Too much architecture." Girls of the Second Year say, "Over-done, unpleasant"; "Very bloody"; and a girl of the First Year, "When they dragged the people after the chariots." These last comments, together with other comments of dislike, suggest that for the younger and the more impressionable, films should be selected that have no element of cruelty or torture.

The Vanishing American, a story of the Indians in the World War and of their ill-treatment on the reservations, is a favorite of the girls, appearing among their top ten, with a rating of 2.32, while with the boys it rates only 2.05. There are not many comments to help us determine the reasons for this difference, although 168 boys and 118 girls have seen this film. The boys who marked it L comment as follows: "Dry"; "Indians didn't win the war as it was in the film"; "Too sad"; "Dull"; "Impossible"; "It tried to arouse too

much pathos but not well done." A Fifth Year boy says of this film and The Flaming Frontier, "What I most dislike are the Westerns. Guess I am getting too ancient for Bill Hart." A Sixth Year boy ends this discussion with this,—"Mush and absurdity."

The girls, on the other hand, have these reasons for liking The Vanishing American. First of all there is the comment previously quoted, of the girl who found in Ben Hur and The Vanishing American "a deeper meaning." Other comments are, "Because of its story and beauty"; "I liked the Vanishing American because I like Western pictures and the life. It gave just the way Indians were treated by such people"; "I like Richard Dix's acting"; "The idea that the movie intended to bring forward and the way it accomplished it"; "Beautiful photography and the fine direction"; "Told very plainly how cruelly the Indians were treated."

There are so few comments that too much weight can not be given to them; but two things seem to stand out in the girls' comments, namely, the acting and probably the personality of Richard Dix, and sympathy for the poor Indian. In the boys' opinion the creating of this sympathy was overdone in the production. It might be well to add to their opinion the minority opinion of one little girl in the First Year, "It reeks with patriotism and sadness."

Variety. The most striking difference shown between the two top lists is in Variety, which with the boys appears in the top ten; with the girls, in the lowest ten. An understanding of this film depends on a mature point of view and interest in screen technique. One would not expect children of the junior high school to see or to like Variety; yet one First Year girl gives as a reason for liking it, "Repents of past wrong." The girls who do like it and comment, are as emphatic as the boys about the good acting, the construction of the story, and the screen technique. Some of these comments are worth quoting.

Three comments from the Sixth Year girls are these: "Different from the ordinary movie, and the photography was wonderful"; "It was not the plot I cared for, but the acting, which surpassed, I think, anything I have seen this year"; "Excellent acting, correct settings, good plot, excellent filming, almost reaching perfection."

A Fifth Year boy says, "Variety, The Four Horsemen, and Lady Windermere's Fan show true life, conflicting emotions. They have

direct appeal and are masterpieces of theme and style. There is no pettiness, no cheapness, and nothing but what is vital." Another Fifth Year boy says, "I like the change from the common, ordinary photography exercised by the American film companies. It afforded a new field of observation of the little intricacies of the screen." And a boy of the Sixth Year says, "Variety was worked out so that it was almost real. The atmosphere of the vaudeville theatre was vividly portrayed. Emil Jannings is an artist who works in shadows; he is the Rodin of the screen."

The above were selected for special discrimination. The comments in general stress originality, sincerity, excellences of acting, of suspense and of setting. Nobody mentioned what impressed at least one adult, who thought Variety might be salutary in this period of "the free life," through its relentless presentation of the consequences of unchecked emotion. Only the little girl of the First Year (who shouldn't have seen it) observes, "Repented of past wrongs."

The reaction of the girls who dislike Variety may also be a moral reaction, differently felt. The most frequent expressions are "disgusting," "repulsive." "The type of story" and "the vulgar people" are mentioned. "I don't like to have my hero a murderer," one girl said to the writer, and the same idea is expressed in these comments: "Didn't like the slaughter and the vulgar people"; "I hate depressing pictures where the heroine and the hero get killed."

Variety as rated in the girls' list is 1.78, in the boys', 2.16. This difference of 38 points is a greater difference than in the case of any other film. Apparently, a distinctly unpleasant subject, showing vulgar people and a murderer as hero, will be voted down by the majority of Horace Mann girls. If the filming, the acting, and the story construction are exceptionally well done, the same picture will be rated very highly by Horace Mann boys. The boys' vote on Variety is really on production value and the girls' vote on subject matter.

Considering now the films which stand at the bottom of the two lists, we have a large number of L comments, 381 by the girls and 201 by the boys. Many of these do not amount to more than an emphatic underlining of the word "dislike," for such comments as "did not appeal to me," "dull," "dumb," "just terrible," "uninteresting," "boring" do not add much. On the whole, the L comments

are not as discriminating nor as thoughtful as the M comments just considered. Some individuals, however, are able to analyze the reasons for their dislikes. For instance, a girl of the Fourth Year says, "I dislike especially any silly or overdone type of comedy such as Battling Butler. Also overdone pathos or stale romance, such as Little Annie Rooney and Beverly of Graustark." A Sixth Year boy who has seen 47 of the 54 films has this to say, "I dislike films either because they are poorly directed, the acting is bad, the story is too old and lacks punch, or the stage managing and technical direction are poor."

In general the reasons that guide Horace Mann boys and girls in disliking a film are these: lack of a good story or good acting and presence of exaggeration,—too much love or too much pathos or too much comedy. But there are still other more unconscious reactions, as is shown by the girls' fury of comments against Variety and against Charlie Chaplin and other exponents of "cheap" or "vulgar" or "silly" comedy, and shown also by the boys' united indifference to films in which a girl heroine figures in a story of modern romance.

Taking up first the dislikes in which the boys and the girls agree, Grass and Nanook appear on both lists in the lowest ten, Grass standing lowest of all on the girls' list. The low rating of these unusual films was a disappointment to the adults interested in this questionnaire, for we had thought that the unusual intelligence of the "Horace Manners" would lead them to like these films better than the average movie audience had done. Individuals do comment appreciatively, but their voices are lost in the general vote. The comments on films discussed previously showed us that these boys and girls are looking for action, plot, and suspense in a screen story. "Just the everyday living of a certain tribe, and not interesting," is the comment of a Third Year boy on Grass; and "Had no consecutive plot," a Third Year girl says of Nanook, which pictures the life of the Eskimos; and another girl says, "Did not have any story to it, just a lot of traveling." Moana, the picture of native life in the Samoan Islands, rates almost in the lowest group with the girls, but higher with the boys. Moana is liked by the boys as well as two football plays, two Westerns, and a war comedy! Evidently the boys judge a film on what they consider its merits, not for the type of photoplay it belongs to. In Moana, the prominence given to the man's endurance and to the

young boy's skill in hunting may have interested the boys. One boy says, "I liked the suspense where the boy caught the crab."

Most of the reasons, with both boys and girls, for disliking Grass, Nanook, and Moana concern the lack of plot. There is, in each case, a comment "too educational" and one girl gives this curious objection to Nanook, "Lack of stars." And there is this objection by a Third Year girl to Grass, "I didn't like the scene where the little sheep drowns. And after the picture I felt as if I had been through it all. It was too sad." Evidently there was drama, emotion, and suspense in this "everyday living" after all.

"No plot," however, remains the characteristic comment. A Fifth Year girl says, "No plot, and I prefer a movie with a plot just as I prefer a novel with a plot to it." The same desire for plot causes unfavorable comment on A Kiss for Cinderella, and this would seem to be a perfectly legitimate desire in drama. Other unfavorable comments from both boys and girls are "too imaginative," "childish," "kindergarten stuff." A boy says, "A picture for a girl and not for a boy." Four girls say, "Don't care for fairy stories." However, the girls as a whole like A Kiss for Cinderella well enough to rate it 1.98, while the boys' rating of 1.68 places it the very lowest on their list.

Three Western films are rated low by both boys and girls. The Flying Horseman is in the lowest ten with both; The Devil's Horse in the boys' lowest ten; Tony Runs Wild in the girls' lowest ten. A Sixth Year girl probably was a general spokesman when she said, "The Devil Horse and Tony Runs Wild were films about horses and not very interesting." A Sixth Year boy says, "Who cares? Too much horsey business." Though the word "childish" appears in the comments, it is not just as juveniles that these films are not liked, but also for these reasons, "A little over-done"; "The same old thing"; and "I don't like Western pictures." A Third Year girl says, "Western stuff; just the same as any other; you can guess ahead what is going to happen."

War Paint, in the girls' lowest ten, has not enough comments to indicate the reasons for their dislike. Exit Smiling, disliked almost equally by both boys and girls, also has few illuminating comments, except for this one, "Exit Smiling has too much stress on the comedy part and consequently has forgotten the human interest in the story."

This comment could be made only by a girl, as the next discussion will show.

The remaining films in the two lowest groups not yet discussed are given below with their respective ratings.

Boys' Rating	Title	Girls' Rating
	Boys' List	
1.86	Little Annie Rooney	2.04
1.85	La Boheme	2.10
1.85	Lovey Mary	2.04
1.71	Ella Cinders	1.92
1.70	Sparrows	1.91
1.68	A Kiss for Cinderella	1.98
	Girls' List	
2.01	Battling Butler	1.88
2.08	You'd Be Surprised	1.81
1.98	The Gold Rush	1.75

It will be seen that the films disliked by the girls are all screen comedies; how much more they are liked by the boys, the figures show. Some boys dislike these comedies for the same reasons that the girls give; the slapstick of Charlie Chaplin in The Gold Rush is especially disliked by both boys and girls, this film receiving from the 170 boys who saw it more L's (22) than M's (19). The girls who saw it (126) gave it almost five times as many L's (39) as M's (8). On the other hand, the girls give their approval to Syd Chaplin in The Better 'Ole to such a degree that it appears in their top ten. The significant fact, though, is the presence of three screen comedies in the lowest ten of the girls and their higher rating by the boys.

Referring to the list above, we see that the films disliked by the boys all deal with the romance of a girl heroine. How much more the girls like this type the figures show. There are other reasons, of course, that contribute to this dislike. The boys give as reasons dislike of the actress, exaggeration of the story, the acting, "over-done emotion," or, as more simply stated, "too much mush," "too sad," "too much love," "too much sob-stuff." In La Boheme, the over-done emotion and Lillian Gish are stressed. In A Kiss for

Cinderella, the reasons given have been discussed. But all these heroines the boys reject,—Barrie's Cinders and the Ella Cinders of the Buffalo Courier, Lovey Mary of the Cabbage Patch and Little Annie Rooney of the East Side, and the orphan on the baby farm in Sparrows. One modern heroine, however, in Everybody's Acting gets a higher rating, even 1.92. The rating is perhaps not given to her or her affairs, but rather to the good acting and the good direction and the humor. The fact of really good production will put a film way up on the boys' list, even if there is a girl heroine and her mother besides, as in Stella Dallas, which rates 2.14.

In spite of these modifications in the noticeable tendency of the girls to dislike screen comedy and the boys to dislike romance in everyday life, we find here the same facts that were found in the investigation conducted by Mr. Clarence Arthur Perry of the Russell Sage Foundation.[1] In this investigation, answers from 16,348 boys and from 20,095 girls in high schools all over the United States showed a 27 per cent preference by the boys for comedy and only a 19 per cent preference by the girls; while there was a 28 per cent preference for love stories by the girls and only 11 per cent by the boys. What is interesting is the fact that even in the preferences shown to be general the country over, Horace Mann boys and girls are influenced also by production values.

Combining the points just brought out with the results of our discussion of films in earlier parts of this paper, we may conclude that Horace Mann High School boys and girls differ in certain particulars. The girls have, or at least express, a greater sensitiveness to ethical questions; they like to have their sympathies appealed to and their good taste not offended, as shown particularly in their comments on Beau Geste, The Vanishing American, and Variety. They also prefer the heroine of romance to the comedian. The boys show more knowledge of the problems of filming; they are more inclined than the girls to consider each film on its merits as a production. They like the presence of humor in a film, and do not care for the heroine of romance unless in a good production.

The similarities are as striking as the differences. The general standard is high for story, acting, and setting, with both the boys and the girls. Both are sensitive to pictorial effects. Both are im-

[1] "The Attitude of High School Students toward Motion Pictures" by Clarence Arthur Perry. Published by National Board of Review of Motion Pictures, New York, 1923.

patient of over-exaggeration, whether in the details of the story or in the expression of emotion. In fact, their standards for judging a film seem to be much like those of cultivated adults, with one striking exception;—the comments on Grass and Nanook, as well as the comments on the films liked, show an insistent demand for "plot with action." Among the boys particularly are some very good screen critics. Whatever may be said against the habit of movie going, these Horace Mann High School pupils seem to have used the movies as a school of dramatic criticism, and to have formulated for themselves standards and an interesting body of opinions.

NEW STUDIES IN EDUCATION

ACCOUNTING PROCEDURE FOR PUBLIC SCHOOL SYSTEMS*

IN its earliest aspects, public school accounting represented primarily a classified transcript of receipts and expenditures, and was developed for the purpose of providing a historical record of all business transactions. Educational administration as such was at first little concerned with these records. The early financial statements or reports were related in only slight degree to the success attained in the operation and management of public school systems.

It seems now a mere platitude to say that the function of school accounting has not been fulfilled when a complete and accurate record of each business transaction has been made. For, conceived in terms of the principles of good management, and the peculiar nature of the public school enterprise, public education would not thrive unless the facts which can be made available through accounts are used intelligently by the management to provide a better educational service, and to show the public with increasing clarity and simplicity that the schools are increasingly productive and are returning value received for every dollar spent.

THE FUNCTION OF ACCOUNTING IN PUBLIC SCHOOL MANAGEMENT

The accounting procedure and practice which will produce these results will fix in large measure the technique to be used and the accounts to be kept. In other words, the accounting program should be dictated by the needs of those groups which are responsible for progress in the schools. They should define the characteristics of the financial statements and reports and express the contents in terms of the detailed needs of the educational program. The mere factual, historical records can be made when these other insistent demands of the productive program are satisfied.

The analysis of a system of financial accounting presented in this book is designed to furnish officers in school systems, particularly in typical communities, with a treatise on this subject which will enable them to develop accounting procedures adequate to meet all needs. It has been the aim of the authors to suggest procedures which will enable the superintendent of schools to secure the data essential for the improvement and the greatest possible development of the school system over which he and his staff have direction. To this end, such accounting practices as are here described should assist in (1) the formulation of the educational program; (2) the proposal of a financial plan for payment of the program; (3) the planning of capital needs for the plant program; (4) the establishment of standards for salaries

* By Engelhardt, Fred and Von Borgersrode, Fred. Bureau of Publications, Teachers College, Columbia University.

and wages; (5) the control of material needs through standardization and distribution; (6) the preservation of the resources of the community; (7) the prompt payment of obligations; (8) the economical operation of the schools; and (9) the establishment, through adequate publicity, of community confidence.

THE PLAN

Every effort has been made to simplify the whole bookkeeping clerical work without sacrificing accounting control. The organization and arrangement of the classification of the items of income and expenditures, equipment and supplies, have been developed more extensively than has been heretofore the practice. A convenient organization of code-symbols is presented to facilitate the distribution of income and expenditures for cost finding purposes. The arrangement makes the large, unwieldy ledgers unnecessary.

The voucher register is originally and uniquely used to provide the essential accounting controls for stores, petty cash, and the revolving funds as distinct from current expenditures, capital outlay, and debt service. This is equally true of the cash book, in which a separate accounting is made for revenue, non-revenue, and revolving fund receipts.

Complete accounting control is provided through the general ledger and a more specific use is made of the journal voucher. The whole system is arranged so that it can be expanded to meet the needs of a large school system, or contracted to meet the requirements of a small one. The detail in which the accounts are to be kept can be determined locally by the superintendent. Costs are readily found for any classification.

The complete system[1] can be incorporated in one loose-leaf binder, or separated into distinctive ledgers in large systems, as the case may be. The size is the most convenient for bookkeeping purposes, being 14″ x 17″. Index tabs are provided for convenient use.

The text outlines in detail the actual bookkeeping entries to be made. A clerk may readily acquaint himself with the procedure by following the instructions given. The necessary documents, such as purchase orders and requisitions, are illustrated and their uses are related to the bookkeeping procedure. The bookkeeping record forms comprise:

Voucher register
Cash book
General ledger
Distribution ledger
Revolving funds accounts ledger
Warrant register
Treasurer's receipt register
Employee's accounts register
Budgetary statement register
Insurance register.
Stores register
Property ledger
Outstanding indebtedness register
Extra-curricular accounts ledger

THE COURTS AND THE CURRICULUM*

CERTAIN curricular practices as well as proposed changes in public school curricula oftentimes result in controversies which must be adjudicated by our higher judicial tribunals. Consequently, the courts exert an important

[1] The complete system of accounting forms with binder complete for small and large systems can be secured from the Bureau of Publications, Teachers College, Columbia University.

* By Otto T. Hamilton, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 250.

influence upon the curriculum of the public schools.

In this study about eight hundred cases were examined and data therefrom classified and presented under the following headings:

1. The Scope of the Curriculum.
2. Control of the Curriculum by Legislative Action.
3. Control of the Curriculum by Local Agencies.
4. Religion and the Bible in the Public Schools.
5. The Furnishing of Instructional Supplies.
6. The Adoption and Change of Textbooks.

FINDINGS OF THIS STUDY

There is an abundance of evidence justifying the conclusion that the courts will continue to favor the extension of a public school curriculum of secular subjects and curriculum units which will meet the needs of the child as a progressive civilization reveals them; to guard the curriculum against the inclusion of practices—particularly offensive manifestations of religious attitudes, impulses, and associations—that may have a tendency to disorganize and injure the schools; to recognize the inherent right of the child to an education and the duty of the state and the parent to provide the same; to safeguard the public in regard to the expense incident to the public school system while favoring proper instructional equipment and opportunities for the pupils; to hold that a public or common school must be free, open equally to all, and under complete public control.

There are good reasons for concluding that legislatures will continue to increase their detailed prescriptions and controls of the curriculum; that well-organized groups of citizens will continue to have great influence with legislatures in securing legislation providing for specific prescriptions; that the courts will continue to uphold the reasonable rights of the parent as against curricular prescriptions of local school officials and unwarranted restrictions by legislatures or even by a majority of the voters; that the Federal courts may be expected to exercise an increasing influence over our curricular controversies.

There is evidence for the belief that the trend of the decisions will continue to be toward the exclusion of manifestations of the religious impulse from the public schools because they are provocative of controversy, ill will, and injury to public schools, society, and the state.

The author has faith in the integrity and fairness of the higher courts when dealing with such issues. However, he is convinced that it is unwise and unfortunate for contending groups to continue to force the courts to lay down rules upon increasingly detailed curricular practices. Such a procedure can only result in impoverishing the curriculum and reducing it to the barrenness of dry incontrovertible facts. The curriculum of the public schools should not be determined by the mandate and injunction of the courts. The real solution of this part of the problem lies in the hope of a change in the hearts and attitudes of men. Whenever men come to be charitable enough of the opinions, the aspirations, and the hopes of their fellow men to respect their rights and their beliefs, then such differences as have arisen over religion and the Bible in the public schools will not have to be settled by the courts. Until that time ap-

proaches the courts must be depended upon to pronounce final judgment upon our curricular controversies. It is the firm conviction of the author that the decisions show that there are fewer evidences of susceptibility on the part of the courts to hasty judgment, bias, prejudice, or undue influence of any sort—even during times of great public stress, strain, and emotion—than on the part of any other class of persons whose actions have been involved in the cases studied, whether it be legislatures, school officials, teachers, parents, pupils, the public, or even the religious organizations and their leaders.

SOME ADMINISTRATIVE PROBLEMS OF THE HIGH SCHOOL CAFETERIA*

THE establishment of the high school cafeteria has produced a number of important administrative problems. The management of the school cafeterias involves the control of several hundred thousand dollars a year in each of a number of the larger cities. Forty or fifty thousand dollars are frequently spent to provide the building space and the equipment and furniture for the cafeteria. In many cases the rooms and equipment do not fit the need. Frequently the cafeteria has been run for profit at the expense of the service to the students and teachers. The rapid extension of this service to a large number of high schools makes it desirable that the experience of those in control of school cafeterias be made available and that standards of management be established.

PROCEDURE OF THIS STUDY

The evolution of the cafeteria as part of the new high school buildings was indicated from an analysis of the plans of two hundred and fourteen high school buildings, published at three different periods. The present status of the cafeteria was investigated by a study of the high schools of Connecticut and Ohio.

A personal investigation was made of twenty-seven high school cafeterias. A checking list was assembled for this purpose. It consisted of sixty questions covering 287 items of information grouped under the general headings of building provisions, equipment provisions, finance, personnel, menu, and miscellaneous. By means of this checking list and a questionnaire, data were secured from 121 high schools located in 87 cities in 23 states and the District of Columbia.

FINDINGS AND RECOMMENDATIONS

The size of the cafeteria required for a high school depends upon the capacity of the building and the proportion of the students who will patronize the lunch room. This proportion was determined for two groups of schools. The predicted number of students served for schools with continuous session is equal to 187 less than 80.3 per cent of the pupil capacity. For schools which have a noon recess, the number of students served is 16.5 per cent of the capacity. In addition to the number of students served by the cafeteria, from ten to fifteen per cent bring their lunches but do not buy from the cafeteria.

Standards for space and room requirements were established as a result of

* By Willard S. Ford, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 238.

the study. A total of 12 square feet per dining room seat is needed for the various rooms, nine of the twelve square feet are for the dining room, one square foot for the kitchen and two square feet for the auxiliary rooms. The types of rooms desirable for various sizes of schools were also determined.

The estimate for the budget for the cafeteria equipment and furnishings should be thirty-five dollars per dining room seat. Lists of necessary and desirable equipment for the kitchen, serving room and dining room for various sizes of schools are based on the experience in the different schools. The number of serving counters required may be calculated by dividing the number of dining room seats by the product of the rate of service per minute and the length of the period less ten minutes.

Many of the problems of management were investigated and a number of standards were developed. A list of nine principles of cafeteria control are also presented.

Many of the schools lack an adequate accounting system for the cafeteria. A model system consisting of three books of account and fifteen auxiliary forms was prepared. This accounts for both the cash and the supplies and is simple enough to be used by the average cafeteria manager.

The high school cafeteria may be more than a service department. It offers a number of important educational opportunities. They are summarized as follows:

a. Education in proper food selection and proper eating habits.

b. Socialization during the lunch period.

c. Student leadership and civic responsibility.

d. Business practice for the commercial students.

e. Laboratory for advanced classes in catering and institutional management.

THE TEACHER'S CONTRACT AND OTHER LEGAL PHASES OF TEACHER STATUS*

THIS study had a fourfold purpose: First, to discover the local legal restrictions and regulations affecting teachers. Second, to survey the field of state control of teachers, including state laws affecting teacher status and court decisions. The legislative phase is treated both in cross-section and in trends. Third, to determine the legal and practical limits of board control over teachers through contractual stipulations. Fourth, to suggest an optimum board-teacher relationship.

MATERIALS USED IN THIS STUDY

The following materials were used in the study:

1. Returns from requests for teacher contract forms made of 513 superintendents of schools. The school systems covered a wide range in size and location.

2. Answers from requests for copies of formal school board rules and regulations made of superintendents of 129 selected schools.

3. Statutes, state constitutions, court

* By Earl William Anderson, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 246.

decisions, and rules, regulations, and decisions of state educational authorities.

FINDINGS OF THIS STUDY

One fifth of the school systems use either no teacher contract forms or use them only to record employment. Teacher contracts are least frequently found in the larger cities. In five states the state form is used by all schools. State suggested forms are in common use in five other states. Teacher contract forms are used for the following purposes:

1. To record the employment of the teacher.
2. To indicate rules, regulations and routine requirements.
3. To exhort the teacher and advise her regarding her conduct out of school.
4. To gain certain contractual rights.
5. To impress the teacher with the sanctity of the contract through the use of seals and legal verbiage.
6. To instruct the teacher concerning provisions of state laws.

Formal rules and regulations are not used at all in two fifths of the school systems. They are used most extensively and in most detail in the large systems.

The law in 23 states specifies items that must go into the contract. Statutory teacher duties are found in 28 states, causes for dismissal in 44 states, and provisions for appeal by dismissed teachers in 21 states. Appeal procedures vary greatly; in two states the procedure goes through four consecutive appeal bodies, finally reaching the state board.

In the main, if the powers of the local board are stated specifically by statute, these may not be extended by contract. If given in general terms, they may, contractually, be reasonably extended to include rights to dismiss upon definite notice and to dismiss women teachers upon marriage. Boards may contract for reasonable liquidated damage for breach of contract, and may, through contract, hold back a definite portion of the pay of the teacher during the term of the contract as evidence of the good faith of the teacher.

During the past twenty years the statutes show a decided, although not rapid, tendency toward increased central control. This tendency is most marked in those states which had the greatest centralization twenty years ago.

Wide variation in teacher status is found. In general, the status of the teacher is most secure in large cities and in states having considerable central control. In larger cities there occurs most often the stipulated right to resign on specified notice. In the contracts of small school systems there are more often clauses providing for dismissal on thirty days' notice, for dismissal of the woman teacher upon marriage, and for liquidated damage from those teachers breaking their contracts.

An optimum board-teacher relationship is suggested, including a clear demarcation between the powers reserved by the state and those delegated by it to the local authorities, and the proper use of contract forms and of rules and regulations by the local board of education.

COLLEGE NEWS

BOARD OF TRUSTEES OF TEACHERS COLLEGE

AT the annual meeting of the Board of Trustees of Teachers College, held on Thursday, February 17, the following official announcements were made.

PROMOTIONS FROM JULY 1, 1927

Faculty of Education

Clifford B. Upton, A.M., from Associate Professor to Professor of Mathematics.

William A. McCall, Ph.D., from Associate Professor to Professor of Education.

Samuel R. Powers, Ph.D., from Associate Professor to Professor of Natural Sciences.

William D. Reeve, Ph.D., from Associate Professor to Professor of Mathematics.

Fannie W. Dunn, Ph.D., from Assistant Professor to Associate Professor of Education.

Paul R. Mort, Ph.D., from Assistant Professor to Associate Professor of Education.

Daniel H. Kulp, II, Ph.D., from Assistant Professor to Associate Professor of Education.

Milton C. DelManzo, Ph.D., from Assistant Professor to Associate Professor of Education.

Ruth Andrus, Ph.D., from Assistant Professor to Associate Professor of Education.

Ralph B. Spence, A.M., from Instructor in Educational Psychology to Assistant Professor of Education.

Goodwin B. Watson, Ph.D., from Instructor in Educational Psychology to Assistant Professor of Education.

Faculty of Practical Arts

George J. Cox, A.R.C.A. (Lond.), from Assistant Professor to Professor of Fine Arts.

Grace MacLeod, Ph.D., from Assistant Professor to Associate Professor of Nutrition.

Sallie B. Tannahill, A.M., from Instructor to Assistant Professor of Fine Arts.

Albert W. Heckman, A.M., from Instructor to Assistant Professor of Fine Arts.

Maude B. Muse, A.M., from Instructor to Assistant Professor of Nursing Education.

Hugh Grant Rowell, M.D., from Lecturer in Physical Education to Assistant Professor of Health Education.

Alice E. Bivins, B.S., from Instructor to Assistant Professor of Music Education.

CHANGE IN TITLE

Thomas D. Wood, from Professor of Physical Education to Professor of Health Education.

James E. Russell, from Barnard Professor of Education to Professor of Education on the "Richard March

Hoe Foundation," established in 1927 by gift from Mrs. Richard March Hoe as a memorial to her husband, for many years a Trustee of Teachers College. In compliance with the wish of the donor, Dean Russell has been appointed to this chair as its first incumbent.

Paul Monroe, from Professor of Education to Barnard Professor of Education.

LEAVES OF ABSENCE FOR 1927-28

For the Academic Year: Professor Leta S. Hollingworth.

For the Winter Session: Professors Josephine A. Marshall, E. L. Thorndike, H. T. Vulté.

For the Spring Session: Professors Jean Broadhurst, William A. McCall, Annie E. Moore, George D. Strayer, Mary T. Whitley, Cora M. Winchell.

Professor Frank M. McMurry's request to be retired from active service from July 1, 1927, was granted with profound regret. By unanimous vote of the Board, Professor McMurry was appointed Emeritus Professor of Education from the date of his retirement.

The Trustees accepted the proposal of the "Naomi Norsworthy Fellowship Committee" (Miss Clara L. Franke, Professor E. L. Thorndike, Professor C. B. Upton, and Professor Mary T. Whitley) to transfer to Teachers College the "Naomi Norsworthy Fellowship Fund" of approximately $5,700. The Fellowship, which is to be open to men and women, will be awarded every third year at the discretion of the Faculties, the first award to be made for the academic year 1930-31.

The Teachers College budget for 1927-28 was approved as follows:

For the maintenance and operation of Teachers College and its Schools	$2,447,930
For Bureau of Publications..	186,900
For Dormitories and Lunch Rooms	766,416
Total	$3,401,246

EDUCATIONAL ADMINISTRATION

On April 13 Professor N. L. Engelhardt addressed the Thirteenth Annual Conference of Superintendents of Schools of the Commonwealth of Massachusetts at their meeting held at the Bridgewater Normal School.

Professor Carter Alexander, on his recent trip to Missouri, in addition to the two addresses before the Missouri Administrative Association, was asked to speak before the House of Representatives of the State Legislature. His talk there dealt with the need for more state aid for schools in Missouri.

A state aid bill that would use a million dollars in equalizing educational opportunity in Alabama is now before the Alabama Legislature. The equalization features of this bill were drafted by a group on which Professor Paul R. Mort served in the capacity of adviser. An interesting feature of the bill is that it requires each locality to use a salary schedule prepared by the State Board of Education as a prerequisite to receiving equalization aid. The amount per teacher used in determining state aid, however, is a constant figure defined by the average stabilizing points of the salary schedule.

The Board of Education at Ashland, Ky., has published the report made to them by Professors Strayer and Engelhardt. Messrs. Todd, Schmidt, Shumway, and Thomas participated in this study.

Professor Carter Alexander spoke at the banquet of the National Convention of Kappa Phi Kappa, at Gettysburg College on April 8. His address was on "Growth in Personal Effectiveness."

Professor Mort spent February 18, 21, and 23 in Albany in conference with school people and members of the Legislature on the state aid legislation.

School Building Problems, a second problems book prepared by Professors Strayer and Engelhardt, is now off the press of the Bureau of Publications, Teachers College. This book contains 109 problems covering the field of school building development and construction. The text is replete with floor plans, illustrations, diagrams, and the like, which tend to make the problems extremely concrete. This is a volume of 712 pages, the diagrams numbering 143.

Dr. N. L. Engelhardt has an article in the April issue of *New York State Education* on the subject of "School Building Standards with Special Reference to Health Needs."

The survey of the school system of Fort Lee, N. J., made by the Division of Field Studies, has been published by the Bureau of Publications, Teachers College. This study was made under the direction of the members of this department, members of the first major course for superintendents of schools participating in the field work.

Professors Alexander and Mort, with students in the second major course for superintendents of schools, spent the week of March 12-19 in Jacksonville, Fla., working on the financial and classification and progress aspects of the school survey there.

ADVISERS OF WOMEN AND GIRLS

While in Texas in connection with the meeting of the National Association of Deans of Women, Professor Sarah M. Sturtevant visited the University of Texas as the guest of Dean Terrill and the State Teachers College at San Marcos as the guest of Dean Brogdon. Professor Sturtevant spoke before student assemblies at both institutions.

The major class of Advisers spent a profitable morning on February 24 in visiting the Washington Irving High School, New York City. Dean Pratt received this group, explained the general plan of organization of the school, and offered an interesting glimpse into deaning problems as they arise in a technical high school having an attendance of six thousand girls.

On the evening of March 3, the Advisers Club met at the Greenwich House, a settlement in Greenwich Village. Miss Susanna Crawford, the associate director, talked on the work of the settlement and invited the club to inspect the various interesting features of the house. This house is famous for its work in

pottery and wood carving and the organization for club work is extremely interesting.

ECONOMIC SCIENCE AND EDUCATIONAL ECONOMICS

Professor Benjamin R. Andrews spoke before the Eastern Food Service Conference of the National Board of the Young Women's Christian Association, February 4, on the contribution of public food service to society. Part of the address will appear shortly under the title, "A Policy Program for Public Food Service Administrators," in the official magazine of the Y.W.C.A. organization.

Professor Andrews reviewed the work of the special Committee on Personal and Family Finance, of which he is chairman, at the meeting of the National Thrift Committee at the Bankers Club, New York City, on February 11. The committee has in hand plans for promoting a research program on thrift in relation to education, including school savings and banking and industrial thrift.

The second revised edition of *House and Home* by Professor Greta Gray of the University of Nebraska has just appeared in the Lippincott Home Manual Series, edited by Professor Andrews. Professor Gray has been a former teacher of the Housing course in the Teachers College Summer School. She is at present directing Purnell research on home economics in Nebraska.

ELEMENTARY EDUCATION

On February 16 Miss Emma B. Grant gave the third of a series of talks to the New York City Home Economics Association on "Individual Differences" at the Allerton Hotel, New York City.

On March 8 Miss Grant spoke before the Parent-Teachers Association at Garden City, L. I., on "Psychologizing the Parent," and on March 29 to the Principals' Association at Mt. Holly, N. J., on "What is Good Teaching?"

During the week of January 7-12 the instructors in Elementary Education, together with fifteen students, assisted in the survey of the schools of Lynn, Mass. Standardized tests were given to fourth and sixth grades and every school in the system was visited by some member of the group. The Elementary group was responsible for the following phases of the survey: teacher personnel, pupil progress, methods of instruction, supervision and the course of study.

On Monday, March 7, Professor Edwin H. Reeder addressed the teachers of Hudson, N. Y., on "Directing Study in the Elementary School."

On the evening of January 22, a group of Teachers College alumni from New York City and other points met at the Men's Faculty Club to renew friendship at a dinner at which Professor and Mrs. Milo B. Hillegas were the guests of honor.

ENGLISH

Professor Allan Abbott, who is on leave of absence this term, visited during the week of March 1 the State Teachers Colleges at Greenville, N. C., and Farmville, Va.

Professor Abbott has completed a

study of about thirty-six hundred compositions from the Washington Irving High School, New York City, on which six of his classes have worked during the past year and a half. The study included a count of all the errors in form; the derivation of a scale, keyed to the Hillegas-Thorndike-Hudelson series; and the annotation of forty-eight themes representing the worst, the average, and the best writing in each of the eight terms.

FOODS AND COOKERY

On February 26 a conference was held on the Relation of the Household Arts Teacher to Food Advertising and Publicity, as interpreted by home economics specialists in business. The program was provided by former students in Foods and Cookery. Professor May B. Van Arsdale opened the conference, and presented Miss Anna Barrows, who acted as chairman. Miss Ruth L. Parrish spoke on "The Relation of Marketing Courses to Food Education and Publicity."

The morning discussion was devoted to "Food Education through Advertising and Publicity," and addresses were given by Miss Marjorie M. Heseltine, director of the Food Research Department, Hills Brothers Company, New York City, Miss Gudrun Carlson, director of the home economics department, Institute of American Meat Packers, and Miss Maryne Dahnke, director of the home economics department of the Kraft Cheese Company. The discussion was led by Miss Stella Sondheim Browne, of the Bohemian Coffee Shoppes, New York City.

At the afternoon session Miss Edith Barber, editor of the Food Column of the New York *Sun,* spoke on "Food Education through the Daily Press," and Miss Millicent Yackey, editor of Better Housekeeping, *Ladies' Home Journal,* spoke on "Food Education through the Magazine." Following the discussion, tea was served in Dodge Hall.

HISTORY

At the annual meeting held in Dallas, February 26, the National Council for the Social Studies, which is also the Department of Social Studies of the National Education Association, elected Professor J. Montgomery Gambrill president for the coming year.

HORACE MANN SCHOOL

A committee of over thirty parents and teachers of the Horace Mann School has been at work since November collecting information about forty of those colleges and universities which are less well known to New York people. Four speakers will report some of the results of this investigation at a meeting of the Horace Mann Parents Association.

PSYCHOLOGICAL SERVICE AND RESEARCH

In 1924-1925 the department of psychological service and research of the Horace Mann High School, under the direction of Dr. Cecile W. Flemming, the school psychologist, made a definite effort to increase the interest of staff members from several departments of the College in having their students work with the High School upon a variety of tasks of mutual interest and benefit. During that year a total of eighty students worked with the psychologist on tasks ranging from the giving and scoring of mental and achievement tests to the working up into reports data already gathered by the psychologist. These reports served at one and the same time as term papers in the students'

Teachers College classes and provided preliminary reports later to be revised and included in more formal studies for publication.

In 1925-1926 the number of students working on special projects increased. Five women aided in prolonged studies of pupil difficulties in study. There was begun, also, through the combined effort of Miss Helen Atkinson and Dr. Flemming, the coöperation with Professor Maxie N. Woodring on the new course, Training Teachers to Direct the Study of High School Pupils. This coöperation has extended through 1926-1927, and materials are being accumulated for publications on the problem of study for high school pupils.

In the spring of 1926, an informal conference of certain Teachers College professors was called by Professor Pearson to further consider the possibility of coöperative work in projects in which either the Teachers College departments or the psychological service of the School might have the initial interest. As a result of this conference there has been a further increase in the number of students of better ability and more advanced preparation who worked on a variety of tasks the first semester of 1926-1927. In a report recently submitted to Professor Pearson, Dr. Flemming has indicated the number of students who have worked with the department of psychological service during the school year. The report records the names of students, the departments of the College represented, and the courses represented, the name of the professor by whom recommended, and the nature of the projects undertaken and the progress made to date. Aside from elementary experience in administering and scoring standard tests, the work has ranged from instruction and experience in the statistical treatment and use of test results for educational guidance to a comprehensive experiment in the evaluation of pupils' study techniques which will serve also as a Doctor's dissertation.

In January Dr. Flemming completed a survey of the primary grades of the Mountain Lakes Public School, Mountain Lakes, N. J. Mr. George R. Miller, the principal, arranged for the survey of mental ability and achievement of the pupils in the kindergarten and Grades 1 and 2, as a basis for improving classification and for the better adjusting early in their school experiences the pupils who presented problems.

On February 9 Dr. Flemming addressed the Women's Club of Mountain Lakes, N. J., on "The Significance of Mental and Emotional Habits for School Success."

Miss Kate S. Anthony, of the High School household arts department, has been granted a leave of absence for the second semester. The work during her absence will be carried on by Miss Catherine E. Cleveland.

HORACE MANN SCHOOL FOR BOYS

On Friday evening, February 18, the Dramatic Club of the Boys School presented a program of five one-act plays. These plays had been submitted earlier in the year in a contest in the writing of original one-act plays, held under the direction of the Dramatic Club. Each play was staged and coached under the immediate direction of the student-author. The success of this evening, which

was more or less in the nature of an experiment, was so pronounced that the English Department and the Dramatic Club plan to have this an annual event.

Principal Charles C. Tillinghast was one of the speakers at the Headmasters' Association meeting held in Cambridge on February 11 and 12, and gave an address on "Professional Training of High School Principals." Mr. Tillinghast also spoke in Worcester, on March 10, at the annual meeting of the Eastern Music Supervisors, on the topic, "Instrumental Music and School Morale."

HOUSEHOLD ARTS EDUCATION

Professor Wilhelmina Spohr addressed the Women's Club of Elizabeth, N. J., on the afternoon of February 8.

On February 17 Miss Anna Richardson gave an interesting lecture before the Helen Kinne Home Economics Club. Miss Richardson is field agent in Child Development and Parental Education under the American Home Economics Association. She told of the work that is being undertaken by the Association in these special fields.

Students in Household Arts Education have had the pleasure of listening to recent lectures by Miss Anna Barrows, who sketched the lives of Mrs. Ellen H. Richards and Miss Caroline Hunt, and to Miss Claribel Nye, who told of the Extension Service for women in New York State.

The New York State Home Economics Association, of which Professor Anna M. Cooley is president, will hold its annual meeting in New York City, April 18 and 19, at the Hotel Commodore.

Miss Grace Reeves attended a round table conference at the Albany State Teachers College on March 26. She participated in a discussion of the making of a course of study in home economics, based on the child's activities.

MUSIC EDUCATION

On February 14, Mr. W. Warren Shaw, assisted by Miss Syrene Lister, lectured before the Music Club on "Vocal Problems and the Physics of the Voice." The election of officers for the Spring Session took place the same evening with the following results: President, Mr. Jesse L. Scott; vice-president, Mr. W. A. Rennie; secretary-treasurer, Miss Betty Brenneman.

The complete Announcement of the Summer Session lists eighty-five courses in Music Education, of which eleven are in Columbia University and seventy-four in Teachers College. Folders are available which give brief outlines of these offerings, but the complete Announcement with full details may be obtained by writing to the Secretary of the University.

Speakers at recent Wednesday noon convocations of the Music Education department have included Professor K. W. Gehrkens of Oberlin College, who spoke on his observations during a three months' tour of the United States; Miss Bertha B. Clement, supervisor of music at East Orange, N. J., who spoke on some significant aspects

of present-day school music practices; and Mr. Kenneth S. Clark of the National Bureau for the Advancement of Music, who spoke on the plans for the 1927 National Music Week celebration.

At the Dallas meeting of the Department of Superintendence, the Music Education department was represented by Professor P. W. Dykema who attended the three-day session of the Research Council of the Music Teachers National Association, presided at a round table discussion arranged by President Condon and devoted to a discussion of the needs of a new valuation and programing of the music curriculum; and led the singing at the Teachers College dinner. The orchestra which furnished the accompaniment was supplied by the high schools of Dallas and was under the direction of Professor E. B. Gordon, who was on the 1926 Summer Session staff.

NATURAL SCIENCE

Professor Powers spoke before the Science Teachers of St. Louis on February 26, using for his subject, "Goals for Science Teaching in Elementary and Secondary Schools." On February 11, he visited the State Normal School at Towson and advised with the teachers concerning a program of teacher-training in science for teachers in elementary schools.

NORMAL SCHOOL EDUCATION

Professor William C. Bagley served as a special examiner for the Municipal Civil Service Commission in connection with the recent examinations for members of the Board of Examiners of the New York City schools. He assisted in the rating of the theses and papers in the written test and was also a member of the committee of five that conducted the oral, or interview, tests of the candidates who had successfully passed the written examinations. The other members of this committee were Mr. Martin Conboy; Dr. Henry Moskowitz, former president of the Municipal Civil Service Commission; Dean-elect William F. Russell; and Miss May B. Upshaw, deputy chief examiner of the Civil Service Commission.

Professor Bagley spent Thursday, March 31, at the Detroit Teachers College chiefly to confer with members of the faculty regarding some of their curriculum problems. On April 1 he addressed the faculties of the five Illinois state teachers colleges at a meeting in Springfield.

On his return from Dallas Professor Edward S. Evenden stopped in Springfield, Mo., to visit the State Teachers College.

Professor Thomas Alexander stopped at Nashville *en route* to Dallas in order to assist at the exercises in celebration of Dr. Charles McMurry's fiftieth anniversary as a teacher. On his return trip Professor Alexander visited his home in Kirksville, Mo.

Professor Alexander will sail to Germany at the end of May to supervise the work of graduate students making studies of educational problems abroad. He will conduct a seminar for these students in the University of Berlin during the summer and will also deliver a series of lectures there.

On account of Professor Bagley's inability to attend the meeting of the Department of Superintendence, Professor Alexander presented a paper in his stead at the meeting of the City Training School Section. The topic discussed was "The Bearing of General Curriculum Policies on Teacher-Training Curricula."

Dr. J. S. Noffsinger was recently appointed director of the National Home Study Council, with headquarters in Washington, D. C. The National Home Study Council was organized last October as a result of a survey made by Dr. Noffsinger of the private correspondence schools in the United States. This investigation was part of the study of adult education authorized last year by the Carnegie Corporation. The National Home Study Council provides a clearing house for correspondence-school activities. About forty per cent of the field is represented in its membership. A meeting was held in Chicago on January 11 and a Code of Ethics and Educational Standards was formulated and adopted at that time.

At its first meeting this semester, the Teacher Training League elected the following officers: President, William H. Cain; vice-president, Dora B. Smith; secretary, Eleanor J. Rosenquist; treasurer, Willis B. Coale. A social meeting was held on March 22 at which Professor Evenden was the guest of honor.

THE NURSING EDUCATION SECTION OF THE ALUMNI MEETINGS

The program for the Nursing Education group started on the evening of February 11 with a special lecture from the Annie W. Goodrich Lecture Fund which was given this year by Dr. Esther Loring Richards, associate professor of psychiatry of the Johns Hopkins Hospital. The subject of the lecture was "Mental Hygiene and the Student Nurse."

Dr. Richards has had a wide acquaintance with student nurses over a period of some years, as coworker on the staff of the Johns Hopkins Hospital, and as physician, adviser, and friend. In her penetrating and often highly amusing analysis of the problems of the student nurse, she finds that most difficulties lead back into the home and into the habits of mind which have been formed before the arrival of the student in the nursing school. Dr. Richards' first recommendation is that a much more careful inquiry should be made into the personal equipment of the applicant before she is accepted as a student nurse in order that chronic malcontents and unstable personalities should be eliminated in this profession requiring such delicate human adjustments and such a high degree of self-control. This process of elimination should be carried out regardless of advanced education or perfect physical health.

The next step would be to follow the adjustment of the student from the days of probation on, to watch her carefully for signs of maladjustment, and to give the necessary advice and assistance, especially during her early days in the school. At the end of the period of probation, the training school staff ought to have a fairly good idea of the problem material and whether it is modifiable enough for acceptance. According to Dr. Richards "the warning signs are definite and persistent variation between theoretical and practical work, marked emotional upsets

(tears, sulking, anger, panic, and tremulousness) in reaction to criticism, worry over work, etc. Here in the probation period the student should be carefully studied with reference to her habits and abilities with regard to concentration, distractibility, respect for accuracy and thoroughness, fatiguability, qualities for teamwork. Student advisers should get some idea of how the probationer is spending her time off duty; whether she is maintaining a proper balance between daily work and daily relaxations of outdoor exercise, amusements, friendly contacts, etc. I have known a few moments' conversation with a maladjusted probationer to reveal that she was spending all her time off duty in "grinding" in her room, or that she was pouring out too much energy in conducting prayer meetings and teaching Sunday School classes in a local church, or that she had not been out of the dormitory for a walk or to the theater for two months."

Dr. Richards feels that it is often quite as necessary to adapt the profession to the student as the student to her profession. There is much to be done here in training the whole hospital personnel in a new appreciation of the effect of their own personalities and their mental habits on those who come under their supervision and care. "Inserting psychology and courses of Personal Adjustment into the training school curriculum is of little value unless we have a faculty and head nurse staff who have an intelligent understanding of student problems. Why not put down on the monthly report notes of actual ward incidents that occur, instead of recording merely the impression of the nurse in charge? Such facts alone can constitute a basis for constructive faculty discussion of student material." Such a combination of student conferences on personal problems, lectures and class work, and faculty discussion, running through the period of training, would eliminate much institutional friction and help in training all workers in more wholesome mental habits.

Dr. Richards believes that it is desirable and indeed highly necessary for every nurse to have a clear understanding not only of the physical causes of diseases and the physical environment, but also of social and personal behavior and the influences affecting human relations. Such a background is quite as necessary for health work as for social work, since "institutional and public health nursing, hospital social service, family case work, school health and child placing organizations all have identical goals." Medicine is just beginning to realize that behavior lies within the province of health, and that no thoroughly effective medical work can be done without taking into consideration "the patient's habit life from childhood, his characteristic methods of adapting himself to disappointment and fear and other major strains of life. We ask about his financial status, his relations to wife and children and parents. In short, we include behavior and social adaptations in the patient's problem of health."

Dr. Richards emphasizes very strongly the tremendous rôle which the nurse plays in the care of the patient. "The doctor comes and goes. The nurse is with the patient day after day, and upon her tact, judgment, and keenness of observation depends the patient's responsiveness to treatment. Her equipment for such service depends upon the background of experience and training which she has had in working with the concept

of behavior in terms of life factors and life situations as a vital part of the broad field of medicine." She urges that nurses should give at least a year of their period of training to social science and public health and the bearings of these subjects on their own field of work. Such training would infinitely improve the nurse's service to the patient, and it is suggested that it might prove a potent means of educating the physician in these rather neglected aspects of medicine.

The following extracts will show how far-reaching the influence of such a socially equipped nurse may be. "There is nothing deep or mysterious about social science. Its principles should be based on an intelligent and common-sense understanding of human relationships. The nurse is in the most strategic position of any public servant to carry this message to her clients. She comes to them on the common ground of health, which knows no difference in language, or in politics, or in social strata, or in religion. It is the one open sesame to the distress of all sorts and conditions of men. The contacts of the physician are intermittent and often cursory; the contacts of social service are open to the misinterpretation of prying into the patient's business; the contacts of the nurse are made through a quality of service that is more personal and intimate. She can combine advice, suggestions, and plans with all sorts of tangible and objective activities, which make the patient feel that something is being done for his distress. . . . From what I have seen of the nurse in training, the nurse in institutional work, the nurse in the field of public health, I believe she is not only thoroughly competent to understand and utilize the principles of mental hygiene in her work, but that her work in any sphere remains seriously limited without adequate training in the relation of behavior to health. This does not mean that the nurse is to take the place of social service or family case worker, but it means that the nurse should be adequately equipped to take her own share of human welfare responsibilities in whatever direction professional activities lead her."

Such a brief summary as this does not begin to do justice to a paper which is rich in suggestions for all teachers and administrators who have to deal with human nature—their own and others. The numerous character sketches and case outlines which have to be omitted on account of space give point and emphasis to the general principles laid down, and add humor and color to the whole discussion.

On Saturday afternoon the Nursing Education group of Teachers College Alumni Association met to discuss "The Place of Experimentation of Research in Nursing." Miss Hudson, acting as chairman, introduced the subject. Dr. Carleton Lynde, professor of physics, spoke on "Experimentation and Research from the Standpoint of Household Engineering." He described tests which have been used in other fields to measure the amount of work done with various types of equipment and to determine the best method of performing tasks to procure effective results. He suggests that the work done by hospital equipment should be measured to judge its value and that the nurse who actually uses the piece of equipment is in a better position than anyone else to know how the equipment can be improved. He also brought out the suggestion that measurement applied to the work done by the employees of the

hospital, by means of time-motion study would help evolve better ways of performing tasks.

Miss Mabelle Welsh, associate director of the East Harlem Nursing and Health Demonstration, spoke of the value of experimentation in the field of Public Health Nursing. Her main points may be summarized as follows:—

1. Research is needed in public health nursing education and practice in order to test out the effectiveness of our nursing methods and procedures, and to enable us to revamp our principles when these do not fit the facts.

2. The teaching district has been a factor in public health nursing education for some years and will always be needed in order to give young nurses an opportunity to practice their skills under new and varied conditions.

3. The emphasis in the teaching district is mainly on the establishment of techniques. There is danger that in our zeal for efficiency and standardization we will forget the object of our endeavor —the education of the individual in a family of the community.

4. We need special, limited fields set apart in which we can study the individual and the effect upon him of what we teach. It is useless to go on teaching what will not be used. The investigative spirit is needed—the willingness to test our methods and discard these when not effective. We need to keep our program and services constantly under the microscope to determine better ways of doing things.

5. The mother in the home is the pupil who is the raw material of our educational adventure. We must study her needs, her personality, and fit our teaching to what she can do. The mother is not a voluntary student; the nurse has an entry into the home which gives her a tremendous advantage recognized by all who are interested in preventive medicine —not so apparent to those who think of health education as an institutional project. The formal classroom method is replaced largely by individual instruction of an informal nature which aims to develop in the mother-pupil such attitudes toward health as will result in a more suitable environment for the healthful development of the child.

6. The measure of our success as health teachers must be the mother's increasing ability to provide for her children the right environment for their physical and mental well-being.

7. In our nursing laboratory we would have the opportunity to test out our theories in regard to health education and to measure our results.

Miss Marvin's paper, which aroused much interest, appears in full in this number of THE RECORD. In the discussion which followed a number of suggestions were made on other problems relating to research in the fields of Administration and Teaching in Schools of Nursing and to Public Health Nursing. It was a great regret that Professor Daniel H. Kulp was prevented by illness from presenting the contribution of social science to the problems of research in nursing.

On Saturday evening, the Alumnae Dinner was held at the Men's Faculty Club, one hundred and fourteen alumnae and students attending. With Miss Nutting as toastmistress, and with many old graduates present from far and near, a happy and successful dinner was assured. The Nursing Education chorus added greatly to the occasion with a

program of well-selected songs. Brief reports were presented by some of the members of the staff telling of newer developments in the department and of the work of some of the alumnae, especially those in the foreign field. A number of visiting graduates spoke informally about the interesting things they were doing in public health work, teaching, administration, and other branches of nursing. It was a great joy to everyone to have Miss Nutting back with all her old power of inspiration and her gift of prophetic vision. It was very evident that this joy was fully shared by Miss Nutting, who is never happier than when she is surrounded by her old students and by the younger generation in whom she sees the great hope of the future.

PHILOSOPHY OF EDUCATION

Professor R. B. Raup addressed the faculty of the Julia Richman High School of New York City on the afternoon of February 14. This was the opening of a series of meetings in which Principal Michael H. Lucey and his faculty are considering the newer emphases in education. The further meetings will be addressed by representatives of progressive experimental schools in and near New York City.

At the dinner meeting of the Regional Conference of Home Economics and Agricultural Education for the North Atlantic states, held in Bronxville on February 15, Professor Raup gave an address and led a discussion on "Education and Creative Living."

Professor William H. Kilpatrick, in connection with his tour in the Orient, has been delegated by the subcommittee on educational method of the American group, Institute on Pacific Relations, to make a special study of the educational situation in China and Japan. He will attend the Institute on Pacific Relations in Honolulu in the latter part of July, 1927.

PHYSICAL EDUCATION

Dr. J. F. Williams gave an address on Friday, February 11, in Boston, at the Conference of the State Directors of Physical Education.

At the Annual Teachers' Institute of the Department of Physical Training of the New York City Schools, Wednesday, January 26, Dr. Williams read a paper on "The Nature and Purpose of Health Education and Physical Education."

Dr. Williams, Miss M. Knighton, Miss L. Collins, Mr. P. Williams, and Mr. L. Kirberger were in Lynn, Mass., February 8-11, on the school survey.

RELIGIOUS EDUCATION

Dr. Adelaide T. Case made a brief trip during February to Ann Arbor, Mich., and met a number of the students at the University who were interested in religious education. On Sunday she preached in the Episcopal Church. On the way home Dr. Case spent the day at Kalamazoo College with Dr. Faye Klyver, dean of women of the College, and former Teachers College student.

On April 19 Dr. Case will broadcast over WEAF for the Federation of Jewish Women. Her subject will be "Religion in the Home."

SECONDARY EDUCATION

In February, the Secondary Group discussed, under the leadership of Dr. Frank P. Bachman, a series of proposals concerning a study of higher education which he had formulated for presentation to the General Education Board. In March a meeting was held jointly with the Scholia Club. There was a discussion, under the leadership of Professor Daniel H. Kulp, by Principal A. Mortimer Clark, of James Madison High School, and Principal Herbert W. Smith, of Ethical Culture School, on the curriculum principles set forth in Part II of the current Yearbook of the National Society for the Study of Education.

Professor Thomas H. Briggs is making an informal survey of the organization and administration of the Ethical Culture Schools. He has recently delivered a series of six lectures before the Junior League of New York and has spoken at Cleveland.

At the meeting of the National Association of Secondary School Principals, held at St. Louis, February 24-26, Professor Elbert K. Fretwell discussed "A Constructive Policy for High School Publications." He also presented the same policy at the Convention of the Columbia Scholastic Press Association held at Columbia University, March 11.

At the Oklahoma State Teachers Association meeting at Oklahoma City, February 10-12, Professor Fretwell discussed the general theme of practicing citizenship in the public schools, in speeches in the junior high school, principals', and superintendents' sections, as well as in the general meeting of the Association.

The theme of the annual meeting of the Woodcraft League of America, at the Pennsylvania Hotel, New York City, March 12, was "Seek the Joy of Being Alive." Professor Fretwell was the keynote speaker.

Professor Maxie N. Woodring addressed a group of high school teachers in Stamford, Conn., February 15, on the topic, "The Personality of the Junior High School Teacher."

At a meeting of the Brooklyn Friday Morning Study Group, in February, Professor Woodring gave a talk on "The Education of Women in Germany."

A study of the improvement of study habits of students in the high schools of Jacksonville, Fla., is being carried on by Mrs. Beulah M. Warner, of Jacksonville, under the direction of Professor Woodring.

TEXTILES AND CLOTHING

On February 9 Miss Esther Cundiff addressed a meeting of the Homemakers of Suffolk County, N. Y., on the educational and health aspects of children's clothing.

On March 11 Mrs. Evelyn S. Tobey spoke before the New England Home Economics Association at the Twentieth Century Club in Boston on new trends in the teaching of clothing. On March 17 she spoke before the Maryland Teachers Association in Baltimore on the teaching of clothing in high school.

ALUMNI ACTIVITIES

TEACHERS COLLEGE ALUMNI ASSOCIATION OFFICERS*

President: Mr. ZENOS SCOTT, Superintendent of Schools, Springfield, Mass.
First Vice-President: Dr. FANNIE W. DUNN, Assistant Professor of Education, Teachers College.
Second Vice-President: Dr. BESSIE LEE GAMBRILL, Professor of Education, Yale University, New Haven, Conn.
Recording Secretary: Miss MARY LEWIS, Teacher in Horace Mann School, Teachers College, New York City.
Corresponding Secretary: Mrs. EDITH SWAN MOREY, Camp Hill, Pa.
Treasurer: Dr. R. G. REYNOLDS, Director, Bureau of Educational Service, Teachers College.
Members-at-Large: Mr. FRANK PICKELL, Superintendent of Schools, Montclair, N. J.
Miss ANNIE GRACE, 300 Park Avenue, Baltimore, Md.
Miss MARION SHERIDAN, 711 Orange Street, New Haven, Conn.
Alumni Trustees: Mr. JESSE HOMER NEWLON, Superintendent of Schools, Denver, Colo.
Miss MERCY J. HAYES, 301 American State Bank Building, Detroit, Mich.
Alumni Office: Russell Hall, Teachers College, 525 West 120th Street, New York City.

Address all communications to Robert K. Speer,
Field Secretary, Teachers College, New York City.

SECRETARY-TREASURERS OF TEACHERS COLLEGE CLUBS

Revised list. Send corrections to Alumni Office, Teachers College, 525 West 120th Street, New York City

AFRICA—SOUTH AFRICA CLUB
Dr. E. G. Malherbe
University of Cape Town
Cape Town, South Africa

ALABAMA—STATE CLUB
Miss Agnes Harris
Auburn, Ala.

ARKANSAS—STATE CLUB
Mr. H. G. Hotz
University of Arkansas
Fayetteville, Ark.

CALIFORNIA—SOUTHERN CLUB
Miss Lela W. Aultman
6811 Leland Way
Hollywood, Calif.

CHINA—EAST CHINA CLUB
Mrs. Nita M. Stallings
Soochow, Ku, China

CONNECTICUT—NEW HAVEN CLUB
Miss Frances Terrill
100 Whalley Avenue
New Haven, Conn.

CONNECTICUT—STATE CLUB
Mrs. A. W. Jennings
1172 Chapel Street
New Haven, Conn.

GEORGIA—ATLANTA CLUB
Miss Isabel Dew
Head, Mathematics Department
Fulton High School
Atlanta, Ga.

GEORGIA—STATE CLUB
Miss Leila Bunce
Director, Home Economics
Fulton High School
Atlanta, Ga.

INDIANA—SOUTH BEND CLUB
Miss Mamie E. Kerner
115 North William Street
South Bend, Ind.

INDIANA—STATE CLUB
Mr. Howard R. Evans
Principal of Schools
Fontanet, Ind.

LOUISIANA—STATE CLUB
Prof. Homer L. Garrett
Louisiana State University
Baton Rouge, La.

MAINE—STATE CLUB
Mr. Frank D. Rowe
Supt. of Schools
Warren, Me.

MARYLAND—STATE CLUB
Miss Lucetta M. Sisk
Principal, High School
Randallstown, Md.

MICHIGAN—ANN ARBOR CLUB
Secretary
Miss Ethyl M. Neelands
Couzens Hall
Ann Arbor, Mich.
Treasurer
Miss Edith Bader
548 Thompson Street
Ann Arbor, Mich.

MICHIGAN—BATTLE CREEK CLUB
Mrs. D. R. Dudley
Asst. Superintendent of Schools
Battle Creek, Mich.

MICHIGAN—DETROIT CLUB
Recording Secretary
Miss Zaide L. Voorheis
Northern High School
Detroit, Mich.
Treasurer
Kenneth Scaall
Detroit, Mich.

MICHIGAN—GRAND RAPIDS CLUB
Mrs. Mabel Hutchings Bellows
Kensington School
Kensington and Curve Sts.
Grand Rapids, Mich.

MICHIGAN — NORTHERN MICHIGAN CLUB
Mr. Sidney Herring
401 Front Street
Marquette, Mich.

MINNESOTA—STATE CLUB
Miss Elizabeth Sadley
Northrop Collegiate School
Minneapolis, Minn.

MISSOURI—KANSAS CITY CLUB
Miss Madeleine Farley
805 East 30th St.
Kansas City, Mo.

MISSOURI—ST. LOUIS CLUB
Mr. H. P. Stellwagen
Board of Education
St. Louis, Mo.

MISSOURI—STATE CLUB
Miss Margaret Gartenbach
St. Louis, Mo.

NEW YORK—BUFFALO CLUB
Miss Agnes McCarthy
Technical High School
Buffalo, N. Y.

NORTH CAROLINA—STATE CLUB
Mr. L. R. Johnson
111 Steele Street
High Point, N. C.

OHIO—AKRON CLUB
Miss Clara Barker
614 West Market Street
Akron, O.

OHIO—ATHENS CLUB
Mrs. E. B. Smith
University of Ohio
Athens, O.

OHIO—CINCINNATI CLUB
Mr. E. D. Roberts
Asst. Superintendent of Schools
Denton Building
Cincinnati, O.

OHIO—CLEVELAND CLUB
Secretary
Miss Liva Biszantz
11311 Clifton Blvd.
Cleveland, O.
Treasurer
Miss Mary C. Frederick
Mill School
Cleveland, O.

OHIO—KENT CLUB
Miss Isabelle Hazen
Franklin Apartments
Kent, O.

OHIO—TOLEDO CLUB
Miss Grace Gordon
Riverside School
Toledo, O.

OKLAHOMA—STATE CLUB
Miss Frances J. Evans
University of Oklahoma
Norman, Okla.

PENNSYLVANIA—HARRISBURG CLUB
Miss Helen Krall
221 S. 13th Street
Harrisburg, Pa.

PENNSYLVANIA—PHILADELPHIA CLUB
Miss Alice M. Baker
State Normal School
West Chester, Pa.

PHILIPPINE ISLANDS
Mr. Sabino Taburnor
Bureau of Education
Division of Bataugas, P. I.

TEXAS—STATE CLUB
Miss Evalina Harrington
Primary Supervisor, Public Schools
School Administration Building
El Paso, Texas

VERMONT—STATE CLUB
Miss Mary B. Sullivan
Normal School
Castleton, Vt.

VIRGINIA—STATE CLUB
Mr. C. B. Givens
4010 West Street
Richmond, Va.

WEST VIRGINIA—STATE CLUB
Miss Wilma C. Spears
Marshall College
Huntington, W. Va.

WISCONSIN—STATE CLUB
Mr. H. W. Peterson
1049 39th Street
Milwaukee, Wis.

PRESIDENTS OF CLASSES

CLASS OF 1916
Miss Mildred Memory
1 Kermit Road
Maplewood, N. J.

CLASS OF 1917
Mrs. Hazen Hoyt
3558 65th Street
Woodside, L. I.

CLASS OF 1918
Mrs. Louise Holbrook Baldwin
1669 Columbia Road
Washington, D. C.

CLASS OF 1919
Mrs. Joseph M. Couse
408 Asbury Park Avenue
Asbury Park, N. J.

CLASS OF 1920
Miss Ruth Taft
294 Macon Street
Brooklyn, N. Y.

CLASS OF 1921
Miss Margaret Briggs
1505 Jefferson Avenue
Scranton, Pa.

CLASS OF 1922
Miss Eva Wagner
Lincoln School
425 West 123rd Street
New York City

CLASS OF 1923
Miss Grace Ely
6 Kendall Green
Washington, D. C.

CLASS OF 1924
Miss Sallie Serson
34th and Chestnut Streets
Philadelphia, Pa.

CLASS OF 1925
Miss Helen Warren
The Garrison Forest School
Green Spring Valley
Garrison, Md.

CLASS OF 1926
Miss Yvonne Fassler
Winthrop College
Rock Hill, N. C.

THE ALUMNI HOME-COMING DAY

FEBRUARY 12, 1927, was observed as the annual Home-Coming Day of Teachers College alumni. The program, held at ten o'clock in the morning in the Horace Mann Auditorium, was attended by a very large number of alumni and other guests. Mr. Zenos E. Scott, superintendent of schools, Springfield, Mass., and president of the Alumni Association, presided. Community singing, conducted by Professor Peter W. Dykema, opened the program. The general topic of the morning, "The Improvement in Classroom Instruction in the Last Two Decades," was discussed from four different viewpoints. Miss Lida Lee Tall, principal of the State Normal School, Towson, Md., the first speaker, gave an address on the subject, "Improvement of Classroom Instruction in Elementary Education in the Last Two Decades." The second address, "Factors Influencing the Improvement of Instruction in Secondary Schools," was given by Mr. F. W. Wright, director of the Division of Elementary and Secondary Education and Normal Schools, State Board of Education, Mass. A feature of the morning was the singing of "A Song to Teachers College" by the Teachers College Glee Club, accompanied by the Teachers College orchestra. Under the direction of Professor Dykema, the alumni joined heartily in the singing.

Professor Herbert E. Hawkes, dean of Columbia College, continued the program with an address on "Improvement of College Instruction." The final speaker, Dr. B. R. Buckingham, director of the Bureau of Educational Research, College of Education, Ohio State University, discussed the topic, "Improving Instruction in Arithmetic Through Research."

The meeting closed shortly after twelve o'clock, leaving the rest of the day free for special luncheons and meetings. The business meeting of the Alumni Association was conducted at the Alumni Council Luncheon, reported elsewhere in the Alumni Notes. The department of Music Education held a luncheon at the Men's Faculty Club, followed by a meeting of special interest to students of music education. The department of Nursing Education held a meeting in Teachers College in the afternoon and ended their program with a dinner at the Men's Faculty Club.

ALUMNI COUNCIL LUNCHEON

The Alumni Council Luncheon was held on February 12 at 12:30 at the Men's Faculty Club. Mr. Zenos E. Scott, superintendent of schools, Springfield, Mass., and president of the Alumni Association, presided, and the following guests were present: Dr. Fannie W. Dunn, first vice-president; Miss Mary Lewis, recording secretary; Mrs. Edith Swan Morey, corresponding secretary; Mr. Frank Pickell, member-at-large; Miss Mercy J. Hayes, alumni trustee; Mr. Robert K. Speer, field secretary; Miss Katherine I. Sherwin, general secretary; representatives from Connecticut New Haven Club, Connecticut State Club, Georgia State Club, Michigan Grand Rapids Club, Missouri St. Louis Club, Ohio Kent Club, Pennsylvania Harrisburg Club, Pennsylvania Philadelphia Club, Class of 1923, and Class of 1926; Dean-elect William F. Russell; Professor Emma H. Gunther; and Miss Moukad, stenographer. The absent members of the executive committee were Dr. Bessie Lee Gambrill, second vice-president; Dr. R. G. Reynolds, treasurer; Miss Annie Grace, member-at-large; Miss Marion Sheridan, member-at-large; and Mr. Jesse Homer Newlon, alumni trustee.

The business session of the Alumni Association was held in connection with the luncheon. Mr. Scott first called upon Dean-elect Russell for an introductory word. Short informal reports of the activities of their clubs were given by the various representatives. Miss Hayes led in a discussion of her report, a brief summary of which appeared in the *Teachers College Record* for January. Dean-elect Russell announced that as a result of Miss Hayes's report the Board of Trustees had already authorized the altering of two apartment houses into two- and three-room apartments. This will make available forty-two additional apartments for married students.

Two important questions, the problem of financing the Alumni Association and the method of electing the alumni trustee, were discussed at some length. No decision was reached, and the questions were left in the hands of a committee for further research, the results to be published at a later date.

The reports of the treasurer and retiring field secretary, Dr. Reynolds, were read. They are published below.

The nominating committee presented the names of Mr. Frank Morey, supervising principal of schools, Camp Hill, Pa., and Professor Effie Taylor, Yale School of Nursing, Yale University, to succeed Mr. Frank Pickell and Miss Annie Grace as members-at-large. The report was unanimously accepted and the secretary was instructed to cast one ballot for the election of the two candidates.

The meeting then adjourned.

ANNUAL REPORT OF THE FIELD SECRETARY

To Members of the Alumni Association:

I am glad to report a very active year in Alumni affairs. The usual routine of the Alumni office has been carried out. We have been especially concerned this year with two faculty events. The Association was very active in connection with the dinner commemorating the Twenty-fifth Anniversary of Dr. Thorndike, and in the summer it gave a great deal of its time to the farewell dinner given to Dr. McMurry upon his retirement from Teachers College. The special number of the *Teachers College Record* in honor of Dr. Thorndike was very largely financed by the Association and throughout the year various features have been instigated by the Alumni office.

In coöperation with Professor Dykema, every Alumni club has been furnished with copies of the Teachers College Song, and in addition to that, with the compliments of the Alumni Association, a copy of the Teachers College Song has been sent to practically every institution of higher learning in the country.

The usual routine of faculty speakers has been carried on, and a great many members of the staff have visited the alumni in the field through the local clubs.

There are at present 5,200 members of the Alumni Association and 43 Teachers College Clubs. Of these, six clubs are new this year; one is already a member, and five are applying for charters.

As I give up the duties of the field secretary, which I have carried for several years, I wish to say that it has always been a pleasure for me to work with and for the Alumni Association of Teachers College. There are two big problems which face the Alumni Association as I see it. First: proper method of financing the Association. Since I have been connected with it, the Association's finances have never been at all satisfactory. Second: a democratic and efficient method of electing officers. The Association might as well face the fact that the election of officers is more or less of a farce. It is difficult to get people nominated and it is difficult to get a handful of votes. I believe the Alumni office has plans in mind for both of these problems.

Respectfully submitted,
(Signed) Rollo G. Reynolds
Field Secretary

ALUMNI TREASURER'S REPORT, 1926-1927

Balance on hand February 1, 1926	$1152.21	
Income during the year	1859.48	
Total		$3011.69
Expenditures during the year		2794.28
Balance February 2, 1927		$217.41

Respectfully submitted,
(Signed) Rollo G. Reynolds
Treasurer

THE TEACHERS COLLEGE CLUB OF SOUTH AFRICA

Professor E. G. Malherbe, secretary of the Teachers College Club of South Africa, writes:

"The past year will always be re-

membered by the Teachers College people in this country as the year of Miss Carney's visit. She has already circulated her experiences in her "South African Letters," so that it is not necessary for me to add anything to her very interesting account,—save this, that her visit has not only brought new life to us T.C.-ites by a renewal of contact with the source of our inspiration—our Alma Mater,—but hundreds of South Africans—students, officials, citizens—with whom she came into contact, have benefited by her bright and hopeful message, and have caught a touch of that enthusiasm for education and rural life which she radiated wherever she went. . . . We are looking forward with great expectation to the visit of Professor Snedden in a few months' time. . . .

"On December 11 we had the annual Teachers College Club dinner in Pretoria, the idea being to give the members of our club who live in the North (Transvaal and Orange Free State) a chance of meeting one another in the same way that we in the Southern provinces have had the privilege of doing at Cape Town a thousand miles away.

"At this dinner we had the unique opportunity of being the guests of Dr. and Mrs. Arndt at their delightful little home in Pretoria. I call it unique because in Dr. and Mrs. Arndt's recent marriage we have a happy union between South Africa and Teachers College: Mrs. Arndt (née Miss Ruth Spence) is a Teachers College graduate with a Ph.D. from Columbia University, and Dr. Arndt, now Professor of Economics at the Transvaal University College, also took his Ph.D. at Columbia.

"Some of the members, for example, Mr. Jack Pauw from Potchefstroom, had traveled hundreds of miles in order to be present, and telegrams were received from many who could not be with us. Dean Russell's autographed photo—the totem of our club—was there, too, and looked down benevolently upon the happy gathering! Happy reminiscences and anecdotes from Teachers College days caused the evening simply to fly past.

"Our club is still working on that Symposium consisting of a book of essays on educational problems in South Africa—written from the Teachers College point of view."

CHICAGO TEACHERS COLLEGE ALUMNI

The School of Domestic Arts and Science, Chicago, conducted a Three-Day Homemakers' Conference on January 19, 20 and 21. This conference presented to the homemakers and the home economic group an opportunity to hear Professor David Snedden and Professor Mary Schwartz Rose. Professor Snedden gave two talks, "Salvaging the American Home" and "Needed—A New Cultural Home Economics" and Professor Rose two talks on "Getting Acquainted With Our Foods" and "Contributions of Nutrition Research to Child Welfare." Both speakers were greeted by many of their former students now living in Chicago.

TEACHERS COLLEGE CLUB OF CONNECTICUT

The fifteenth annual meeting of the Connecticut Teachers College Club was held in Hartford, on Saturday, February 12, following a luncheon at the Hotel Bond Annex.

Dr. Samuel R. Powers, associate professor of natural science, Teachers College, was the speaker and guest of honor.

Dr. Powers gave a stimulating and interesting report of the work at the College, covering the development of a very definite and progressive program of activities. Some of the outstanding items included a reference to the appointment of the new Dean, William F. Russell; the developing of housing plans for the married students and their families; the extension of the work of the Institute of Child Welfare Research under the new director, Dr. Helen T. Woolley; and a Curriculum Project concerning the analysis of the studies of the junior high school and of the body of professional literature available. This project is going on under the direction of Dr. Herbert B. Bruner and others associated with him.

Mr. Charles L. Ames, principal of Brown School, Hartford, and a member of the State Board of Education, was also a guest of the club. Mr. Ames brought a greeting from the State Board of Education and expressed the appreciation of that board for the loyal support of its efforts to improve education in Connecticut. At the close of the program Mr. Ames was unanimously voted an honorary member of the Connecticut Teachers College Club.

Mrs. William P. Dyer, a member of the staff at Teachers College, told something of her work in the home economics education department. Miss Frances Terrill, secretary of the New Haven group within the state club, reported many varied activities of the organization throughout the past year, including the entertaining of a party of students from Teachers College, who were making the annual pilgrimage to New Haven.

The following officers were elected for the coming year: President, Mr. Percival S. Barnes, superintendent of schools, East Hartford; vice-president, Mrs. William P. Dyer, of New Britain; and secretary-treasurer, Mrs. A. W. Jennings, of the State Normal School, New Haven.

ALUMNI NOTES

Ida R. Hedke (student 1925-26) is teaching methods in Marathon County Normal, Wausau, Wisc. She writes: "About forty-five seniors are enrolled in the professional course and about twenty in the academic high school course. At present I am teaching geography, supervising some practice, the remainder being professional subjects, drawing and physiology this quarter."

Elizabeth Sage (B.S. 1917) is acting head of home economics, Indiana University, Bloomington, Ind., for 1926-27. She has written *A Study of Costume,* published last year by Scribner's.

J. B. Hambright (A.M. 1915) is principal of the Maple Avenue School, Newark, N. J.

Andrew G. Johnson (B.S. 1913) has been superintendent of the Berkshire Industrial Farm at Canaan, N. Y., for the past six years. He has organized the educational work with a strong vocational background. This coming August will see the completion of three years of psychiatric research demonstration in coöperation with the Commonwealth Fund of New York City. Their desire is to demonstrate to boards of directors and superintendents of institutions such as theirs the need and value of psychiatric approach to the work in dealing with the delinquent.

E. I. F. Williams (A.M. 1920, graduate student 1923-24) will return to West Virginia University, Morgantown, W. Va., to teach again next summer, having taught there for a summer session two

years ago. He is to be there for twelve weeks and will have classes in educational psychology, philosophy of education, and directed teaching.

Elizabeth F. Miller (student 1921-22) is nursing consultant, State Department of Public Welfare, Harrisburg, Pa.

Mabel Milhan (M.S. 1925) is St. Lawrence County home demonstration agent. She has forty-five active units and nearly one thousand members.

Theron L. McKnight (B.S. 1915) is district superintendent of schools, Central Valley, N. Y. He has charge of 55 schools, taught by 175 teachers, and attended by 4,500 pupils.

H. W. Maxson (A.M. 1902) has been superintendent of schools at West New York, N. J., since 1910.

William McElroy Land (A.M. 1922) was elected principal of the high school, Ypsilanti, Mich., and began work in February. Mrs. Land was formerly Hazel Ware (A.M. 1922).

John F. Barnhill (A.M. 1922) is professor of mathematics, Michigan State Normal College, Ypsilanti, Mich.

A. S. Ranbenheimer (A.M. 1920), of the University of Southern California, Los Angeles, Calif., has just returned from a trip around the world. He made a special visit to South Africa, where he met several old Teachers College graduates,—E. G. Malherbe, Miss Ria Fouché, and others. He also visited schools in Europe, India, Burma, China, and Japan.

Ria Fouché (B.S. 1921) has just been appointed inspectress of home economics work in the Cape Colony schools, Cape Colony, South Africa,

Mamie Hassebroek (B.S. 1908) is associate director of the School of Domestic Arts and Science, Chicago, Ill.

H. C. Pryor (Ph.D. 1926) is director of the college training high school and professor of secondary education, Kansas State Teachers College, Pittsburg, Kan. Next year he is to have complete charge of the training school, kindergarten to twelfth grade. His title will be director of the department of professional training and professor of education.

Mary Bessie Cooper (B.S. 1922) is principal of the four lower grades in the Training School of the Western Illinois State Teachers College, Macomb, Ill.

Bertha M. Baldwin (B.S. 1909) started the home service department in the Great Atlantic and Pacific Tea Co. Under the name of Ann Page she writes the Household Arts page for customers.

Mary H. Briggs (Mrs. George W.) (B.S. 1923) is teaching the sixth grade at the Kent Place School, Summit, N. J.

Ella Victoria Dobbs (B.S. 1909) was a speaker in November on the general and sectional programs of the South Dakota State Teachers Association.

J. V. Breitwieser (Ph.D. 1911), associate professor of education, University of California, Berkeley, Calif., has written *Psychological Education,* published by Alfred A. Knopf.

Nora E. Hackley (A.M. 1926) is supervisor of rural education in the Central Missouri State Teachers College, Warrensburg, Mo.

Ethel Rosenberry (A.M. 1925) is teaching English and is dean of girls in the high school, Phoenix, Ariz.

Paul F. Voelker (Ph.D. 1920), president of Battle Creek College, Battle Creek, Mich., has a number of former Teachers College students on his faculty. Among these are Professor Benjamin Birkbeck (graduate student 1926), who is acting head of the department of education and chairman of the liberal arts committee; Miss Alyne Danbury (A.M.

1926), who is professor of textiles and clothing; and Miss Pauline Frederick (B.S. 1926), who is a member of the faculty of the school of physical education. During the summer session President Voelker will be in charge of the division of philosophy, and Miss Jessie Cameron (B.S. 1925) in charge of the division of physical education.

Ora Strange Kilborn (B.S. 1919), who is supervisor of fine and applied arts, public schools, East Orange, N. J., wrote for the November and December number of *Safety Education,* published by the Education Division of the National Safety Council, an article entitled "Safety Posters for Elementary Schools" and for the December number of *The Industrial Arts Magazine,* an article entitled "What Shall We Make for Christmas?"

Fletcher Harper Swift (Ph.D. 1905), professor of education, School of Education, University of California, has recently completed his report on "The Financing of Elementary Schools and High Schools in the State of Utah." This report, made at the invitation of the United States Commissioner of Education as a part of the Utah State Educational Survey, has been published as Chapter XI in the recently issued *Bulletin of the Bureau of Education,* 1926, No. 18, *Survey of Education in Utah.* Utah is the ninth state upon whose system of public school support Professor Swift has reported. A feature of special interest in the present report is the plan proposed for the creation and distribution of a state equalization fund.

RECENT APPOINTMENTS

The following concludes a recent list of appointments reported by the Bureau of Educational Service, Teachers College.

Thompson, Mrs. Keith S.—Teacher of mathematics and science, Gunston Hall, Washington, D. C.

Torbert, Margaret—Assistant in physical education, Salem College, Winston-Salem, N. C.

Vance, Walter—Principal and teacher of Kermit District High School, Kermit, W. Va.

Van Cott, Harrison H.—Assistant director of secondary education, State Department of Education, Albany, N. Y.

Vaughn, Edwin Orlando—Instructor in mathematics and physics, Kemper Military School, Boonville, Mo.

Wann, Harry A.—Supervising principal, Junior and Senior High School, Madison, N. J.

Ward, L. J.—Principal of schools, Public Schools, Wading River, L. I.

Wasson, Grace—Business manager, Women's City Club, Philadelphia, Pa.

Weber, Charles A.—Principal of Atwood Community High School, Atwood, Kan.

Wescott, Howard A.—Instructor in physical education, William Penn High School, Harrisburg, Pa.

Whidden, Eunice S.—Director of religious education, Church of the Divine Paternity, New York City.

Whipple, Beatrice F.—Teacher of art, Robert Treat Junior High School, Newark, N. J.

White, Harold Dee—Teacher of mathematics, Foxwood School, Flushing, L. I.

Willits, S. R.—Supervising principal, Public Schools, Hamburg, N. J.

Williams, Irene—Teacher of home economics, High School, Linden, N. J.

Winning, Freda J. Gerwin—Director of textiles and clothing, School of Education, New York University, New York City.

Whitlock, Mary E.—Teacher of English and history, Prospect Hill School, Trenton, N. J.

Willoughby, Harriet—Primary supervisor, State Teachers College, Mankato, Minn.

Wilson, Jacqueline—Instructor in French and English, High School, Oneonta, N. Y.

Wirt, Lillian Janette—Director of physical education for women, University of Idaho, Moscow, Idaho.

Witzel, Mabel—Instructor in French and German, Western Union College, Le Mans, Ia.

Wolf, Vivian B.—Assistant professor of English, S. F. A. State Teachers College, Nacogdoches, Tex.

Worth, Kathryn—Assistant English teacher, Kent Place School for Girls, Summit, N. J.

Yocum, Mrs. Florence—House director of Women's City Club, Philadelphia, Pa.

Zink, Norah E.—Teacher of geography, State Normal School, New Haven, Conn.